SPECTRUM®

TRBMIM
Management Module Guide

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Preface

The Management Module Guide for the Cabletron SystemsTRBMIM serves as a reference guide for the TRBMIM Management Module software. It provides all the information you need to create, configure, and monitor TRBMIM devices in SPECTRUM.

Who Should Read This Manual

You should read this manual if you are going to model and monitor a TRBMIM device through SPECTRUM. Before reading this manual, you should be familiar with SPECTRUM's operations. You should also be familiar with any network management and hardware requirements described in the TRBMIM documentation.

How This Manual Is Organized

This guide is organized as follows:

CHAPTER	DESCRIPTION
Chapter 1 **Introduction**	Describes the TRBMIM management module and model types.
Chapter 2 **Device View**	This chapter describes the two types of Device View for the TRBMIM Management Module — the Logical and Physical Device Views. The discussion also includes an explanation of how to use each of these views.
Chapter3 **Configuration and Station Table Views**	Describes thevarious configuration views and station table views for the TRBMIM and the network management information provided by each view.
Chapter 4 **Event and Alarm Messages**	Contains a listing and explanation of the alarm/ event messages generated in the Event Log or Alarm Log View for the TRBMIM model type.

Conventions

This manual uses the following conventions:

- Command names are printed in **bold**—for example: **Clear** or **Save & Close**.

- Menu selections to access a view are printed in **bold**—for example: **Configuration** or **Detail**.

- Buttons are represented by a shadowed box—for example: **Help**.

Related Reading

Refer to the following documentation for more information on using SPECTRUM and managing TCP/IP-based networks.

SPECTRUM System User's Guide

SPECTRUM System Administrator's Guide

LAN Troubleshooting Handbook, Mark Miller (1989, M&T Publishing, Inc.)

The Simple Book — An Introduction to Management of TCP/IP-based Internets, Marshall T. Rose, Performance Systems International, Inc.

ISO/IEC 802.5 Token Ring Standards Functional Spec., IEEE

Local Area Networking 802.5 Token Ring Access Method, IEEE

Computer Networks, Andrew S. Tanenbaum, Prentice-Hall, Inc.

Local Area Networks Architectures and Implementations, James Martin & Kathleen K. Chapman for the Arben Group, Inc. (1989, Prentice-Hall, Inc.)

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For additional support for SPECTRUM products, or to make comments or suggestions regarding SPECTRUM or this manual, contact Cabletron Systems Technical Support via one of the following means:

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Chapter 1

Introduction

What is in this Chapter

This chapter describes Cabletron's TRBMIM™ (Token Ring Bridging Media Interface Module), a SPECTRUM management module. It also lists the specific device models supported by this management module, and the model type name assigned to the TRBMIM in SPECTRUM. The model type name refers to the template used to specify attributes, actions, and associations for certain device models in SPECTRUM.

TRBMIM Management Module

> **NOTE**
>
> *If you are running a previous version of SPECTRUM, the following user interface aspects may differ from those described in this publication for SPECTRUM version 4.0:*
>
> - *Order and names of menu selections*
>
> - *Mouse button functionality and other navigational features*
>
> *For information about menu selections and navigating within previous versions of SPECTRUM, refer to the SPECTRUM System User's Guide. For information about menu selections and navigating within SPECTRUM version 4.0, refer to the SPECTRUM Views reference.*

The TRBMIM management module manages TRBMIM devices, using the SNMP advanced network management agent and the Management Information Bases (MIBs) which comes as part of the management module software. The TRBMIM is an intelligent Token Ring concentrator with

bridging capabilities. It provides port level control and statistics for Cabletron's Token Ring Bridging Media Interface Modules. It is fully IBM Token Ring compatible and IEEE 802.5 compliant, using an Intel i960 RISC processor for in-depth management functions. The module is designed to be installed in a mid-chassis slot of a Cabletron Systems MMAC™ (Multi-Media Access Center®), constituting a two-port bridge that connects to one LAN segment via the FNB® (Flexible Network Bus™) and to another LAN segment via a station port accessed on the TRBMIM's front panel.

A second-generation TRBMIM (Cabletron's Dot5 Architecture, available on firmware version 2.00 or higher) also is capable of ring management, as well as providing intelligence to the hub. This capability is available as a switch-selectable mode determined by the setting of hardware switch (S2 in Bank 1, SW1) on the TRBMIM unit. To change modes, you must remove the unit from the system, set the switch to its desired position, and then reinstall the unit in its MMAC slot; the firmware will then set the card to the desired mode when the card is rebooted. If the switch is **ON**, or in the up position, the device boots up for the Bridging-Only mode, and the TRBMIM unit will be the only thing that appears in the SPECTRUM Device View. If the switch is **OFF**, or in the down position, the device boots up in the Bridging and Management mode, and the SPECTRUM Device View will also include the hub and associated devices.

SPECTRUM management of the TRBMIM is based on the following Management Information Bases (MIBs), which come as part of the software module for the model type:

- Cabletron Dot5 MIB
- Cabletron Bridging MIB
- IETF Bridging MIB
- Cabletron Token Ring FNB MIB
- Cabletron DownLoad MIB
- Internet MIB-II (RFC 1213)
- Cabletron Chassis MIB

The following chapters explain how you use SPECTRUM and the management module software to monitor your TRBMIM.

TRBMIM Applications

The TRBMIM management module supports both common and device-specific applications described in the ***MIB II Applications, Bridging Applications, and Miscellaneous Applications*** references. SPECTRUM management of a TRBMIM is based on the following common and device-specific applications:

- Bridging (Gen_Bridge_App)

    - Spanning Tree (Span_Tree_App)
    - Spource Routing (Source_Rt_App

- Static (Static_App)

- MIB-II (SNMP2_Agent)

   - IP (IP2_App)
   - System (System2_App)
   - ICMP (ICMP_App)
   - UDP (UDP2_App)

- Download App (CtDownLoadApp)

The TRBMIM Management Module also supports RMON and DLM, and SPECTRUM management of these MIBs may be purchased separately. Refer to the documentation provided with the RMON and DLM management modules for descriptions of these capabilities. The following chapters explain how to use SPECTRUM and the management module software to monitor and manage a TRBMIM Management Module.

> **NOTE**
>
> *If there is an Uninterruptible Power Supply (UPS) inline with your system, CtUPS_App will appear as a major software application.*

Supported Firmware Revisions

You should create the TRBMIM model using the Model Type Name that corresponds to the firmware revision of your TRBMIM. For the BdgCSITRBM, the firmware revision is 2.00.00 or higher. Firmware versions 1.00 and 1.01 provide only Bridge-Only support.)

SPMA and the TRBMIM

The TRBMIM Management Module provides direct access via button selections from the Device Configuration View to two SPMA (SPECTRUM Portable Management Applications) tools, as discussed on page 3-7 (see *Download Application* and *Trap Table*). Additional SPMA application can be accessed by selecting the Applications option on the Utilities selection on the Icon Subviews menu. To open the SPMA Applications menu from any SPECTRUM view, do the following:

1. Select TRBMIM model.

2. Select Icon Subviews from the View menu.

3. Select Utilities from the Icon Subviews menu.

4. Select Applications from the Utilities menu.

The following SPMA applications are available in the resulting SPMA Applications View as button selectable functions:

For type BdgCSITRBM:

Community Names	Hub View	Trap Table

For Gen Bridge App of type Gen_Bridge_App:

Bridge View

For type CtTokenRingApp (Network 1):

Alarm Configuration	Ring Map	Security	Statistics

For type HubCSITR (Network 2) [Applicable only if device is in Management mode; not available if device in Bridge-Only mode.]:

Alarm Configuration	Ring Map	Security	Statistics

For MIB-II of type SNMP2_Agent:

Generic SNMP (MIB I II)

For DownLoad App of type CtDownLoad App:

TFTP download

For a full discussion of how to activate and use the various SPMA utilities, refer to the ***SPECTRUM Portable Management Application for the TRBMIM User's Guide***, which contains the following information:

- Chapter 2, *Introduction to SPMA for the TRBMIM*, explains how to navigate through the Hub View, monitoring Hub activity, as well as managing the hub at the device, module, and port levels.

- Chapter 3, *Ring Map*, explains how to open the Ring Map window, describes the Ring Map display, and provides instructions for changing the map poll interval, setting the statistics calculation mode, and assigning station labels. Chapter 3 also describes the Map Error table, assigning a station name and drop, the Quick Info Pop-Up window, the Management Station Configuration window, the Ring History Information window, together with procedures for using the Ring Map window's Find features and accessing other SPMA Token Ring applications.

- Chapter 4, *Alarm Configuration*, explains how to set Alarms at the Ring and Station levels.

- Chapter 5, *Statistics*, discusses viewing the Ring Station List statistics, Monitoring Ring statistics, and Station statistics, as well as Ring Variables and Station Variables.

- Chapter 6, *Ring Security Configuration*, explains how to set security for a selected ring, explains the Security Configuration window fields and buttons, including the Allowed and Disallowed Station Lists, and discusses configuration of ring security via the Security Configuration window.

- Chapter 7, *Using the TRBMIM Bridge View*, explains bridging methods, gives a tour of the Bridge Traffic View, describes use of the Detail View, tells how to monitor bridge operation, explains how to configure bridge operating parameters, and gives instructions for setting forwarding thresholds, statistics, and notification options, as well as setting polling parameters and enabling/disabling bridges.

In addition, the *SPECTRUM Portable Management Application Tools Guide* also provides details on other SPMA views and functions, as follows:

- Chapter 2, *Using the MIB I, MIB II Tool*, explains how to use this tool in order to view and to change MIB I and MIB II object ID values.

- Chapter 3, *Using the Community Names Tool*, explains Cabletron's "Component" structure of device MIBs and describes how to change device community names.

- Chapter 5, *Using TFTP Download Tool*, explains how to upgrade firmware on Cabletron devices equipped with Flash EEPROMs.

- Chapter 6, *The Traps Table Tool*, explains how to establish which network management workstations on your network will receive trap alarms from a selected device, as well as providing a brief overview of some of the traps supported by Cabletron Systems' devices.

- Chapter 7, *Using Charts and Meters*, explains how to launch charts or meters (used to analyze device statistics) from a UNIX prompt, and also how to control the Meter Tool's display.

- Chapter 8, *Configuring and Monitoring an Uninterruptible Power Supply*, introduces the UPS system (which connects a computer interface port to an intelligent MIM) and explains how to start, configure, and monitor the UPS Tool.

- Chapter 9, *Using DLM*, explains how to manage "smart hub" devices, or DLM Servers, on your network. This chapter also describes accessing the DLM Application and its windows, adding/deleting DLM entries, and managing DLM.

- Chapter 10, *Using the Path Tool*, explains how to generate a list of router hops between a managed Cabletron device and a remote destination, and also how to display specific information about each hop found in the router path.

- Chapter 11, *MIB Tree / MIB Tools*, provides an overview of the MIB Browser, the MIB Details tool, the MIB Editor, and outlines how to browse the MIB Tree.

Device View

What is in this Chapter

This chapter provides a description of the two types of Device View for the TRBMIM Management Module — the Logical and Physical Device Views. The discussion also includes an explanation of how to use each of these views.

The Device View for the TRBMIM lets you view the logical representations of the TRBMIM device and ports.The Device View also lets you access various menus leading to views that monitor and control the TRBMIM and its ports.You can access the Device View by clicking on the Device View button icon on the selected TRBMIM model, by selecting the applicable **View > Icon Subviews > Device** options from the menu bar, or by clicking the right mouse button on the TRBMIM model icon to activate the **Icon Subviews** menu and then selecting the desired option.

Device View Configuration

The Device View gives an actual dynamic representation of the current TRBMIM configuration used in your system. If the configuration changes, you see the corresponding change in this view, updated with the next-following polling cycle. Four different Device Views are available, depending both on whether you select a logical or physical view and on whether the TRBMIM module was set for Bridging-Only mode or for Bridging-and-Management mode when last booted.

The mode is controlled by firmware selected by the position 2 switch (S2) in hardware switch Bank 1 (SW1) on the TRBMIM card. In the ON (up) position, this switch selects Bridging-Only mode; in the OFF (down) position, the switch selects Bridging-and-Management mode. Figure 2-1 on page 2-4 illustrates a Physical Device View when the module has been set for Bridging-

Only capabilities, in which case the Device View shows only the TRBMIM unit itself. Figure 2-2 on page 2-5 shows the Physical Device View when the module has been set for Bridging-and-Management capabilities, in which case the Device View shows representations not only for the TRBMIM but also for the associated Hub modules. Similarly, Figure 2-3 on page 2-8 shows the Logical Device View for the Bridging-Only mode and Figure 2-4 on page 2-9 shows the Logical Device View for the Bridging-and-Management mode.

TRBMIM Physical Device View

The lower part of the Physical Device View (see Figure 2-1 and Figure 2-2) shows a representation of the actual equipment being modeled — exactly as you would see them if you were to stand in front of the rack in which they are mounted. At the present time, the indicator lights of the TRBMIM components of this program are not implemented; a future revision will provide near-real-time monitoring of associated signal conditions for those indicators.

Accessing the Physical Device View

You can access the TRBMIM's Physical Device View through any of the following methods:

1. Double-click on the Device View button of the TRBMIM device icon, as shown below. This action will open up whichever Device View was last opened for that device (i.e., Logical or Physical).

Location View Icon

Topology View Icon

Device View Button
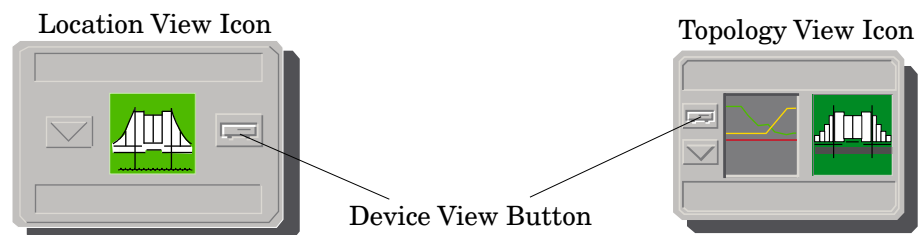
2. Click on the TRBMIM device icon to highlight that icon and then pull down the View menu and select the **Icon Subviews -> Device -> Physical** option.

View menu

Go Back	Ctrl+b
Go Up	>
Icon Subviews	>
View Path	>
New View	>
Bookmarks	>
View History	
Current View Info...	
Notes...	
Jump by name...	
Zoom	>
Device	>
Map Hierarchy	>

Icon Subviews menu

Close	Ctrl+c
Navigate	>
Alarms	
Performance	
Notes...	
Utilities	>
Zoom	
Device	>
DevTop	
Application	
Acknowledge	

Device menu

Logical
Physical

3. Click on the TRBMIM device icon to highlight that icon, click the right mouse button inside that highlighted area to display a duplicate of the Icon Subviews menu, and then select the **Device -> Physical** option.

Icon Subviews menu

Close	Ctrl+c
Navigate	>
Alarms	
Performance	
Notes...	
Utilities	>
Zoom	
Device	>
DevTop	
Application	
Acknowledge	

Device menu
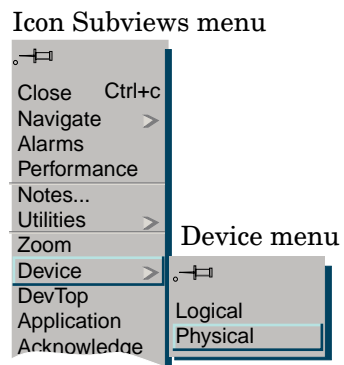
Logical
Physical

Figure 2-1.   TRBMIM Bridging-Only Physical Device View
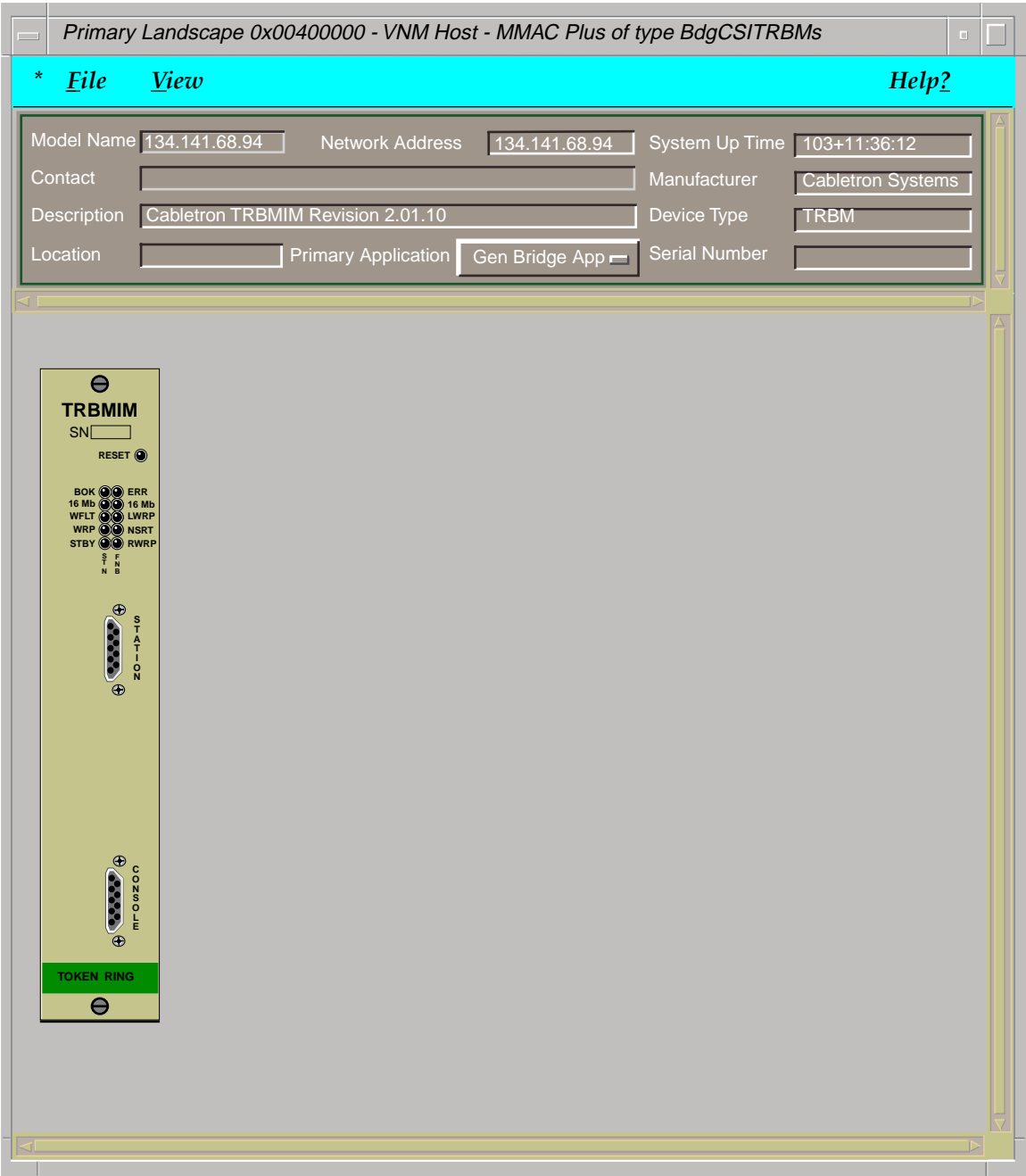
Figure 2-2. **TRBMIM Bridging and Management Physical Device View**
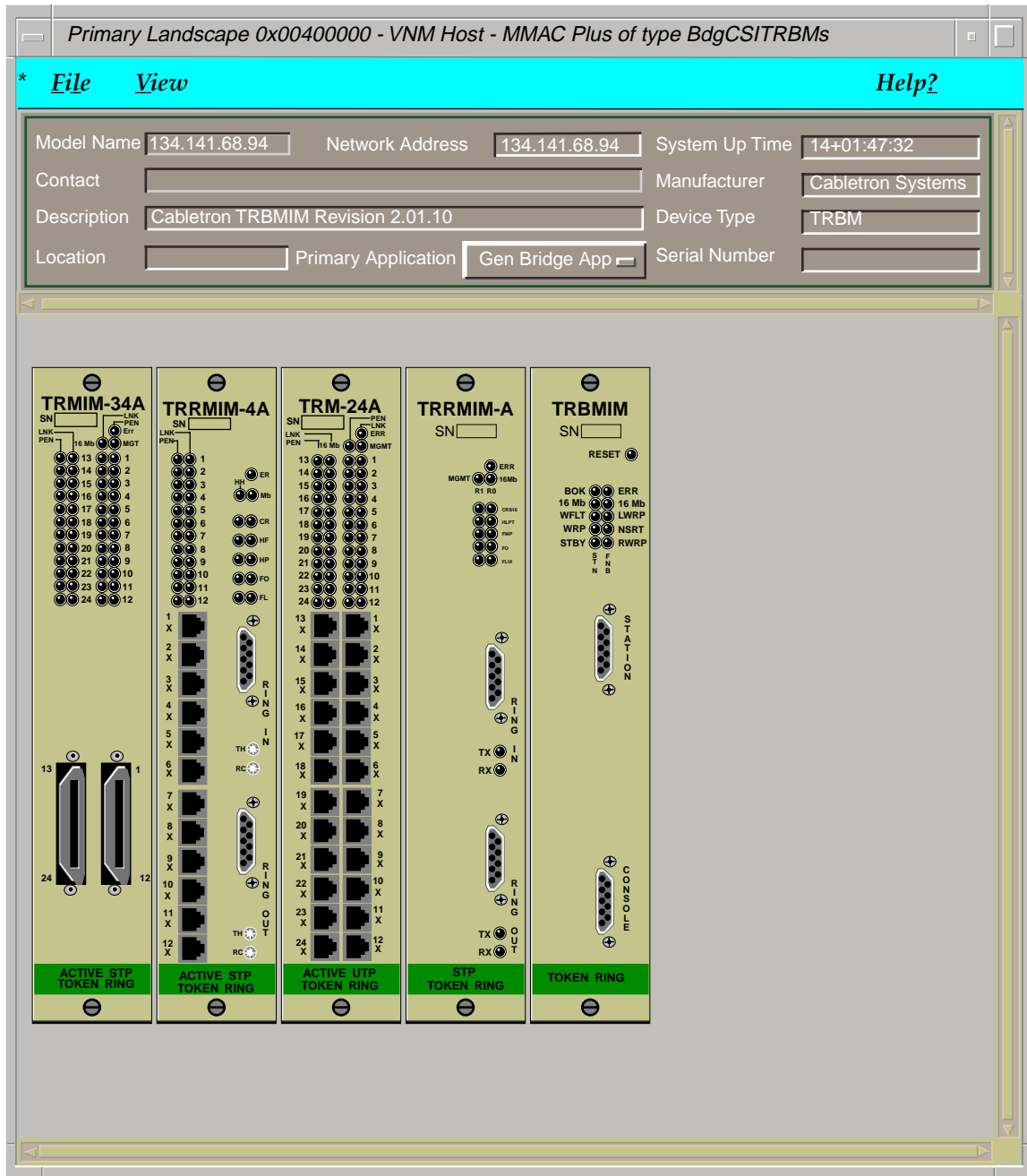
Logical Device Representation

Instead of presenting a physical image of the TRBMIM, the Logical Device View representation provides gauges and information about the device, the modules it manages, and their station and ring ports. Figure 2-3 on page 2-8 shows a representation of a TRBMIM Logical Device View with Bridging-Only capabilities. Figure 2-4 on page 2-9 shows a representation of a TRBMIM Logical Device view with Bridging-and-Management capabilities, with this view therefore including the associated cards and their respective logical station port icons.

In both cases, the logical representation of the TRBMIM module shown in the lower portion of the Device view is divided into different areas, as identified by the captions in these views. The Device Icon area at the top of the module representation presents information about the device. The Bridging Icon identifies the function of the module. The Logical Port Icon area presents information about the station and the FNB ports. Finally, the Ring Management Icon area (present only in Bridging-and-Management mode) presents information about the Ring ports.

Accessing the Logical Device View

You can access the Logical Device view through any of the following methods:

1. Double-click on the Device view button of the TRBMIM device icon, as shown below. This action will open up whichever Device view was last opened for that device (i.e., Logical or Physical).

Location View Icon   Topology View Icon
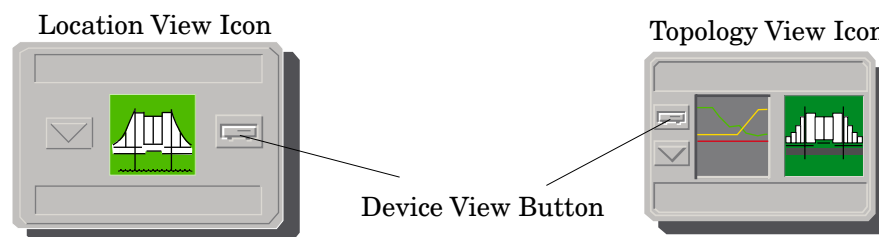
Device View Button

2. Click on the TRBMIM device icon to highlight that icon, pull down the View menu, and select the **Icon Subviews -> Device -> Logical** option.

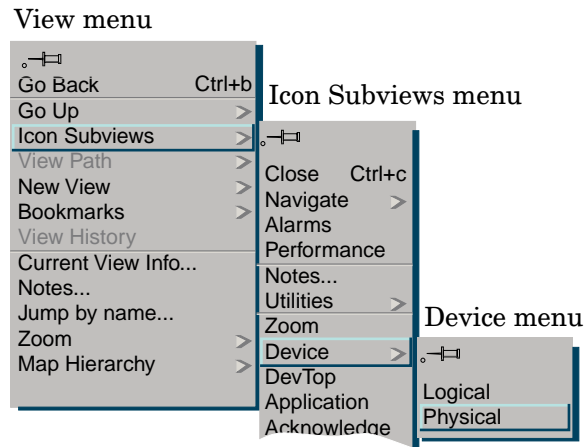|	
Go Back	Ctrl+b
Go Up	>
Icon Subviews	>
View Path	>
New View	>
Bookmarks	>
View History	
Current View Info...	
Notes...	
Jump by name...	
Zoom	>
Map Hierarchy	>

Close	Ctrl+c
Navigate	>
Alarms	
Performance	
Notes...	
Utilities	>
Zoom	
Device	>
DevTop	
Application	
Acknowledge	
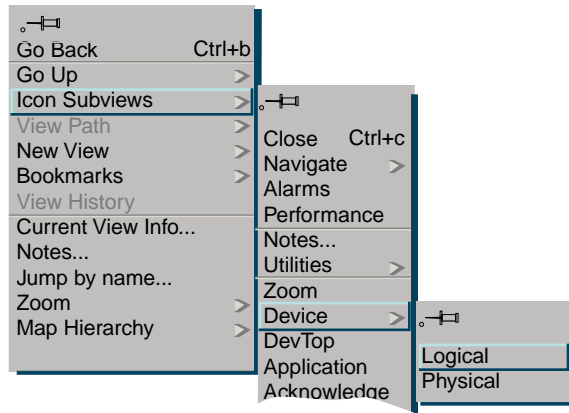
Logical
Physical

3. Click on the TRBMIM device icon, click the right mouse button inside that highlighted area to display the Icon Subviews menu, and then select the **Device -> Logical** option.

Close	Ctrl+c
Navigate	>
Alarms	
Performance	
Notes...	
Utilities	>
Zoom	
Device	>
DevTop	
Application	
Acknowledge	
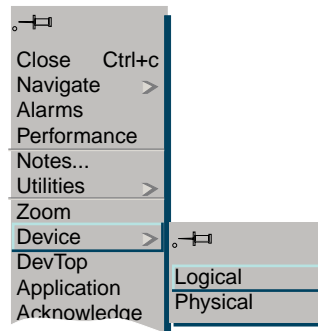
Logical
Physical

Figure 2-3.   TRBMIM Bridging-Only Logical Device View

Figure 2-4.   TRBMIM Bridging-and-Management Logical Device View

Ring Management Icon for Station Port

Ring Management Icon for FNB
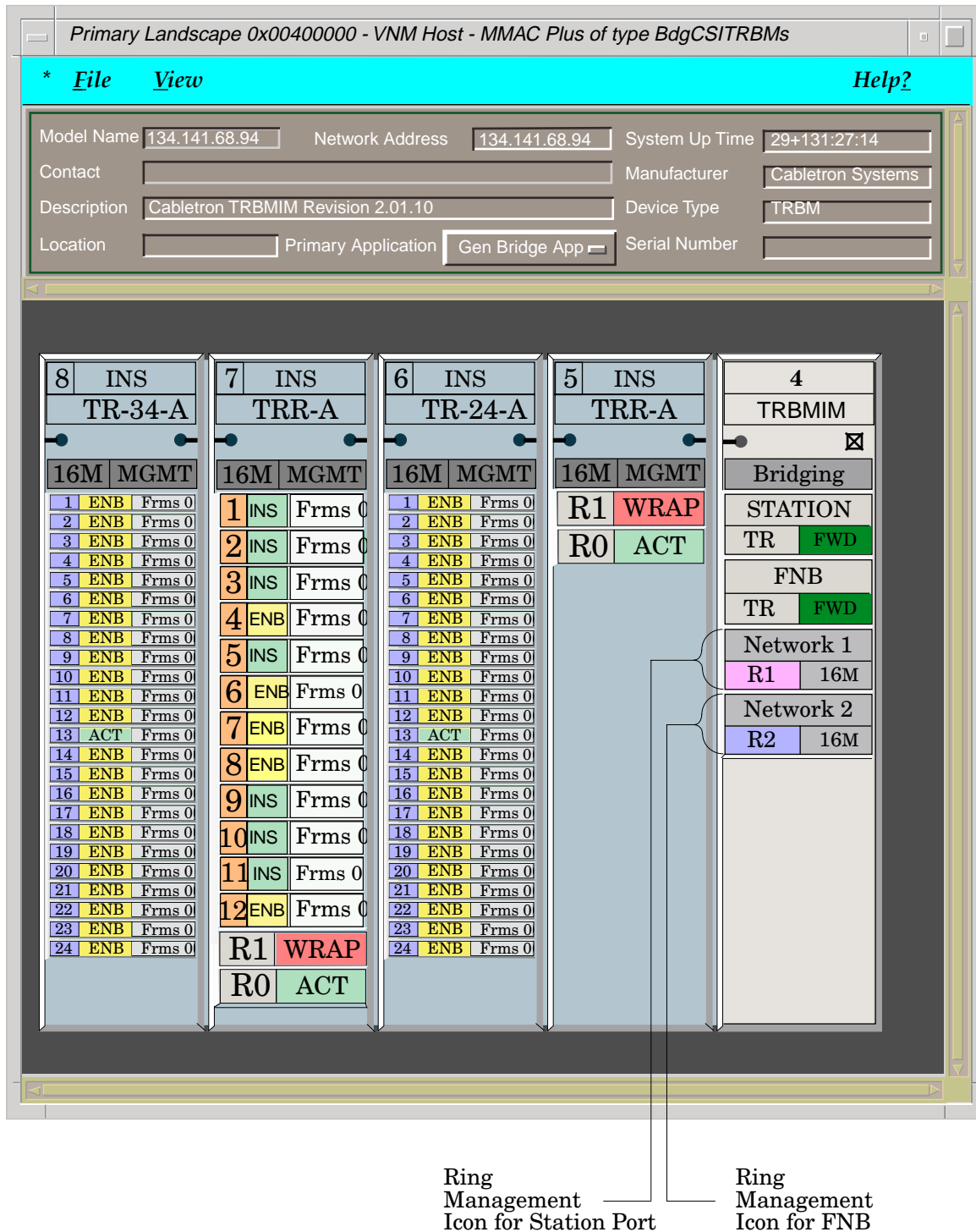
Logical Device Icon

The TRBMIM Logical Device Application Icon displayed in the Logical Device view (refer to Figure 2-3 or Figure 2-4) has specific double-click zones that provide access to specific views, as designated by the left-side captions in Figure 2-5. In addition, as designated by the right-side captions in that same figure, right-clicking in each of the different areas in the Logical Device Application Icon provides access to device menus pertaining to the given area. These device menus provide the same access paths given by the **View > Icon Subviews** menu when the associated area is highlighted.

To access these device menus, move the cursor to the desired icon and click the right mouse button. This causes the system to display a duplicate copy of the **File > Icon Subviews** menu as a pop-up menu that remains on display only so long as you hold your right mouse button depressed. While this device menu selection is on display, you can slide the cursor down through the listed options; whichever option currently is covered by the cursor when you release the button becomes selected. (Alternatively, you can click the left mouse button on the same icon area and then pull down the **View** menu from the Logical Device view menu bar and select its **Icon Subviews** option. The resulting steady-state menu remains on display until you move the cursor to one of its options and click the left mouse button.)

Figure 2-6 provides a breakdown of the Logical Device Icon for the TRBMIM, its double-click zones, and the associated device menu selections. Table 2-1 provides definitions of the different device menu selections.

Figure 2-5.   Logical Device Icon Interface Selections
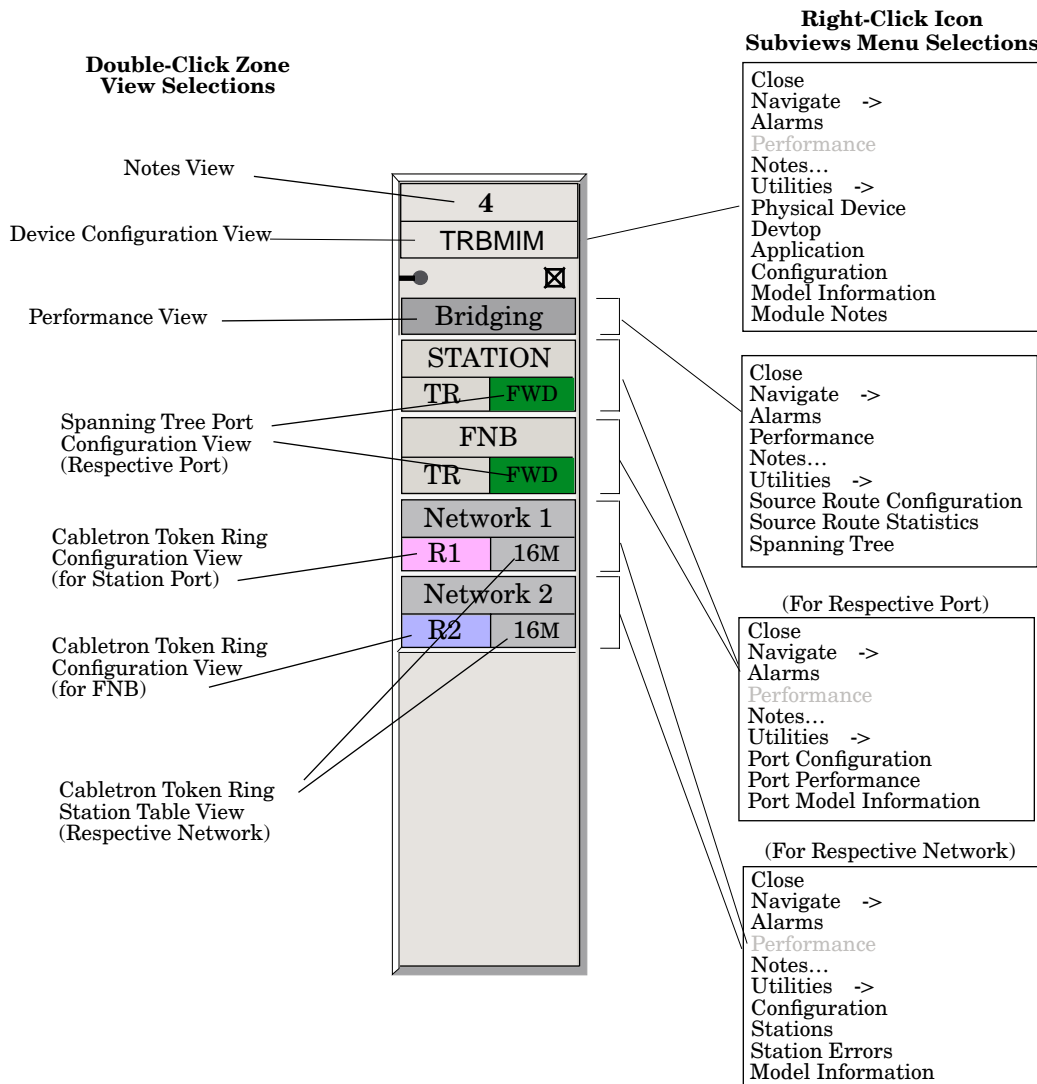
Logical Device Icon Components

The Logical Device Application Icon, which actually consists of the entire management module representation in the Logical Device view, contains two double-click areas providing information pertaining to the device (refer to Figure 2-6), as well as the subordinate areas pertaining to specific functions, ports, or networks. These double-click areas have the following functions:

SlotNumber/Module Notes Access Label – Displays the number identifying the hub slot location occupied by the TRBMIM module being viewed. Double-clicking on this label accesses the Notes window for the TRBMIM.

Device Label – Identifies the TRBMIM as the type of physical device being modeled. Double-clicking on this label accesses the TRBM Device Configuration view (see page 2-8).

Figure 2-6.   **TRBMIM Logical Device Application Icon Detail**
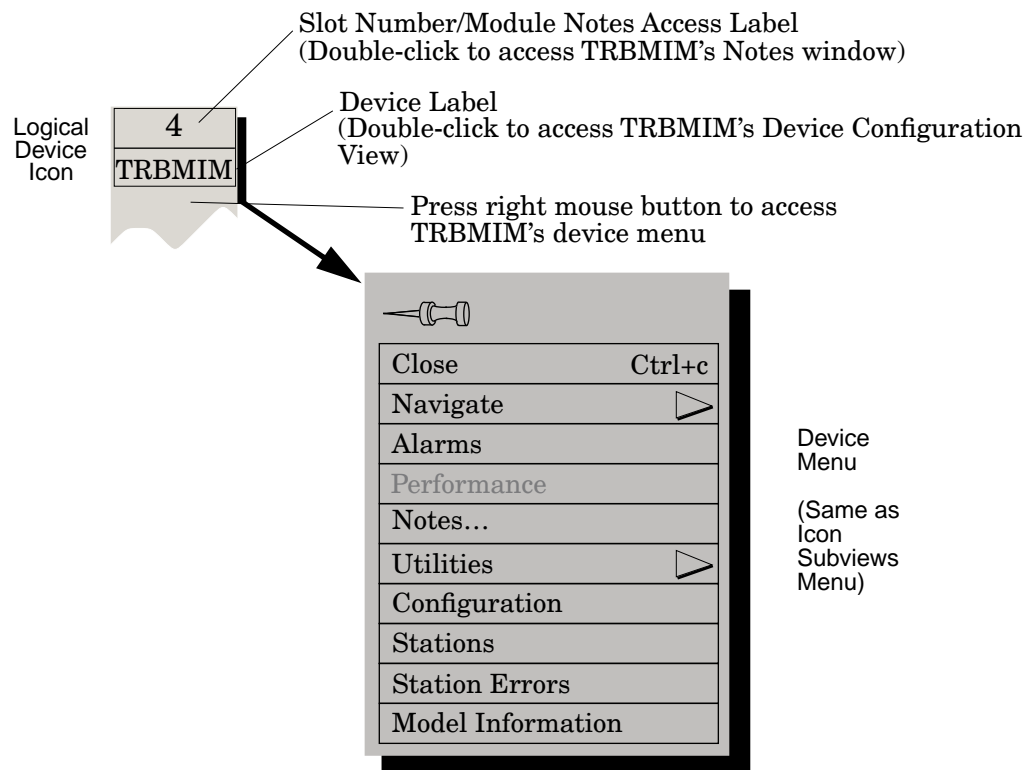
Bridging Performance Access Label

Table 2-1.   **Device Menu Selections Accessible from Logical Device Application Icon**

Menu Selection	Description
Close	Closes Logical Device view.
Navigate	Opens Navigator submenu, allowing you to navigate in or up. For more information on the Navigator submenu refer to Chapter 4 in the ***SPECTRUM Views*** reference**.**
Alarms	Opens the Alarms view, which identifies alarms (if any) for the model.
Performance	Opens the Performance view for the TRBMIM device. (Available only when Primary Application selection is for an application that supports the Performance view.)
Notes...	Opens the SPECTRUM Notes facility for the device.
Utilities	Opens the Utilities submenu, allowing you to access any SPMA or other non-core utilities you have purchased for SPECTRUM
Configuration	Opens the TRBM Device Configuration view for this device. For further information on this view and its related views, refer to *Device Configuration View*, starting on page 3-2.
Stations	Opens the Token Ring Station Table view. For further information on this view and its related views, refer to *Token Ring Station Table Views*, starting on page 3-28.
Station Errors	Opens the Token Ring Station Isolating Errors view. For further information on this view and its related views, refer to *Token Ring Station Isolating Errors Table View*, starting on page 3-32.
Model Information	Opens the TRBM Model Information view for this device.

The Bridging Performance Access Label consists of one icon, which corresponds to the models in the Gen_Bridge_App in the Application view. The Bridging Performance Access Label displays the bridging information for the TRBMIM device and provides a device-related pop-up menu, which is the same menu you would get if you were to click on that same label and then select **Icon Subviews** from the **View** menu. To access the device menu, depress the right mouse button while the cursor is on the Bridging Performance Access Icon to bring up the device menu, and then slide the

cursor down through that menu to select the desired option. Alternatively, you can click once on the Bridging Performance Access Icon to highlight that icon and then select the View > Icon Subviews option from the menubar.

Figure 2-7 provides a breakdown of the Bridging Performance Access Label for the TRBMIM and its associated device menu selections. Table 2-2 provides definitions of the associated device menu selections.

Bridging Performance Access Icon Components

The Bridging Performance Access Label (refer to Figure 2-7) consists of one area providing information pertaining to the ring ports. The Bridging Performance Access Label displays the bridging capabilities for the TRBMIM. Double-clicking on this label accesses the Performance view.

Figure 2-7. **Bridging Performance Access Label**

Bridging
Performance
Access
Label

(Double-click to access TRBMIM's Performance View.)
[Provided via Gen_Bridge_App]

Bridging

Press right mouse button to access
TRBMIM's device menu.

Close	Ctrl+c
Navigate	▷
Alarms	
Performance	
Notes…	
Utilities	▷
Source Route Configuration	
Source Route Statistics	
Spanning Tree	

Device
Menu

(Same as
Icon
Subviews
Menu)
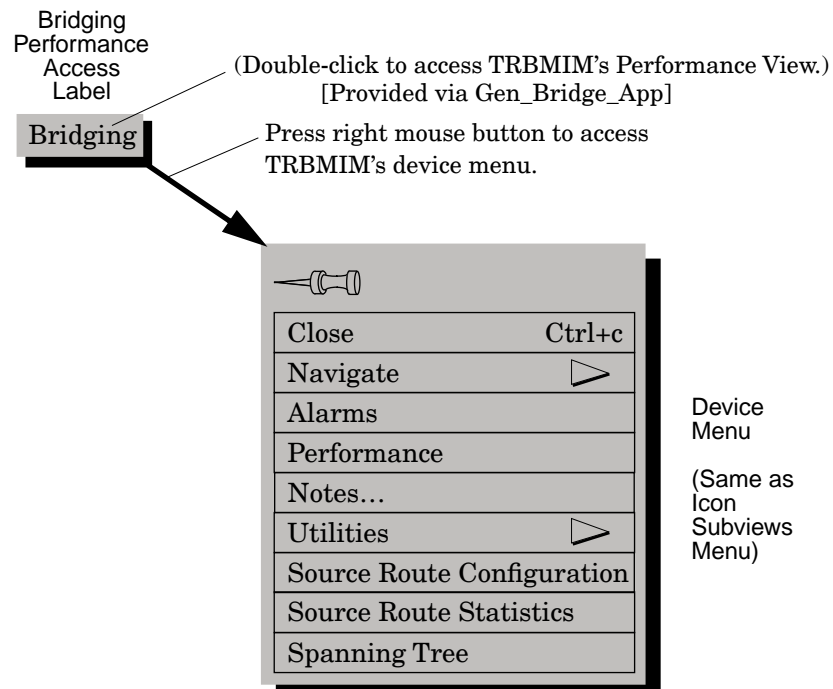
Logical Port Icons

Table 2-2.   **Device Menu Selections Accessible from Bridging Performance Access Label**

Menu Selection	Description
Close	Closes the Logical Device view.
Navigate	Opens the Navigator submenu, allowing you to Navigate In or Up. For more information on the Navigator sub-menu, refer to Chapter 4 in the **SPECTRUM Views** reference.
Alarms	Opens the Alarms view, which identifies alarms (if any) for the model.
Performance	Opens the Performance view for the TRBMIM model.
Notes...	Opens the SPECTRUM Notes facility for the device.
Utilities	Opens the Utilities submenu, allowing you to access any SPMA or other non-core utilities you have purchased for SPECTRUM.
Source Route Configuration	Opens the Source Route Bridge Configuration Table for this device. For further information on this view and its related views, refer to *Source Route Port Configuration View*, starting on page 3-11.
Source Route Statistics	Opens the Source Route Bridge Statistics Table for this device.
Spanning Tree	Opens the Spanning Tree Information view.

The Logical Port Icons have specific double-click zones and a device-related pop-up port device menu, which is the same menu you would get if you were to click on that same Logical Port Icon and then select **Icon Subviews** from the **View** menu. To access the port device menu, depress the right mouse button while the cursor is on the Logical Device Icon to bring up the menu, slide the cursor down to the desired option, and then release the mouse button. Alternatively, you can click on the Logical Port Icon zone and then select the View > Icon Subviews option from the menubar. All of these subviews can also be accessed from the DevTop View.

Figure 2-8 provides a breakdown of the Logical Port Icon and the associated port device menu selections. Table 2-3 provides definitions of the port device menu selections.

Figure 2-8.   **Port Icon Detail**
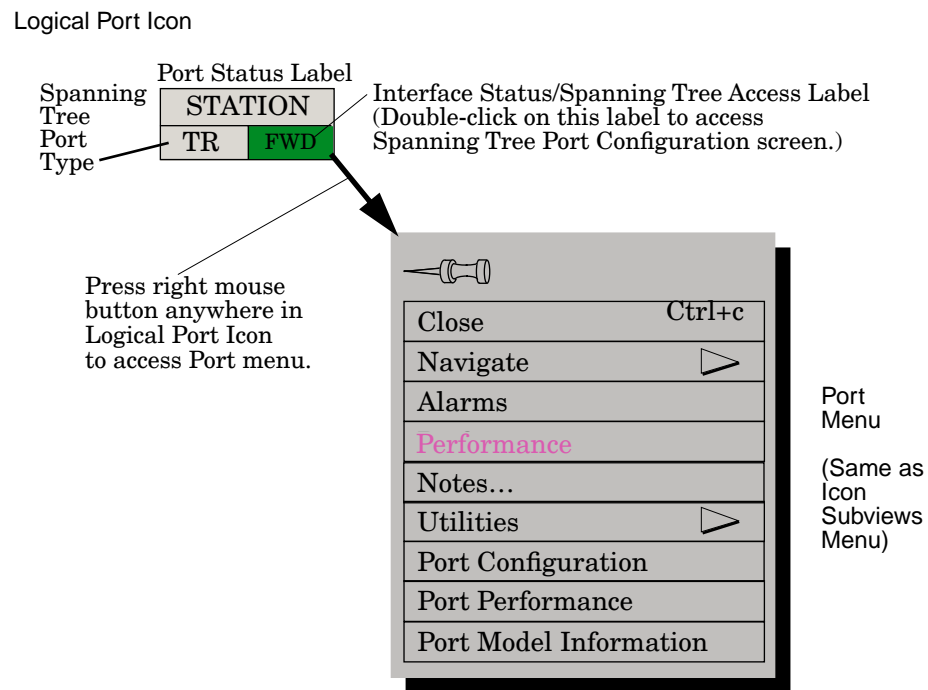
Table 2-3.   **Port Menu Selections Accessible from Port Icon**

Menu Selection	Description
Close	Closes the Logical Device view.
Navigate	Opens the Navigator submenu, allowing you to Navigate In or Up. For more information on the Navigator submenu refer to Chapter 4 in the ***SPECTRUM Views*** reference.
Alarms	Opens the Alarms view, which identifies alarms (if any) for the model.
Performance	Opens the Performance view for the TRBMIM device. (Available only when Primary Application selection is for an application that supports the Performance view.)
Notes...	Opens the SPECTRUM Notes facility for the device.
Utilities	Opens the Utilities submenu, allowing you to access any SPMA or other non-core utilities you have purchased for SPECTRUM.

Table 2-3.   **Port Menu Selections Accessible from Port Icon (Continued)**

Port Configuration	Opens the Spanning Tree Port Configuration view for this port. For further information on this view and its related views, refer to *Spanning Tree Port Configuration View*, starting on page 3-12.
Port Performance	Depending on current Primary Application selection, opens applicable Performance view for this port.
Port Model Information	Opens the Generic Bridge Port Model Information view for this port.

Logical Port Icon Components

The Logical Port Icons consist of three areas providing information pertaining to the station ports (refer to Figure 2-8). These areas have the following functions:

Port Status Label − The port status label, designated either STATION or FNB.

Port Type Label − The port type label. For a TRBMIM, this value is always **TR** (Token Ring).

Interface Status/Spanning Tree Access Label − Shows the status of the port, as follows:

Table 2-4.   **Colors and Meanings for Logical Port Icon Status Labels**

Status Label	Color	Meaning
BLK	Orange	Blocking
BRK	Red	Broken
DIS	Blue	Disabled
FWD	Green	Forward
LRN	Magenta	Learning
LST	Magenta	Listening

Ring Management Icon

The Ring Management Icon appears on the TRBMIM's Logical Device view only when the TRBMIM is in Bridging-and-Management mode (refer to Figure 2-4). This icon provides a link to the managed ring. It has a double-click zone and a pop-up Ring Management menu, which is the same menu you

would get if you were to click on that same icon and then select **Icon Subviews** from the **View** menu. To access the Ring Management menu, position the cursor on the Ring Management Icon and depress the right mouse button to display the menu, then slide the cursor down to the desired option and release the mouse button. Alternatively, you can click in that same icon area and then select the **View > Icon Subviews** option. In addition, you can also access these same subviews by clicking on the HubCSITR icon in the Application view and then either selecting the Icon Subviews option from the View menu or else holding down the right mouse button while the cursor is on that HubCSITR icon. The list of options obtained thereby also provides access to the DevTop view, as well as the ones accessible from the Logical Device view.

Figure 2-9 provides a breakdown of the Ring Management Icon, its applicable double-click zone, and the Ring menu selections. Table 2-5 provides definitions of the associated Ring Management menu selections.

Ring Management Icon Component

The Ring Management Icon (refer to Figure 2-9) consists of three areas providing information pertaining to the ring ports. These areas have the following functions:

Station Port Network Label – The Station Port Network Label identifies the port-connected devices as a management ring.

Figure 2-9. **Ring Management Icon Detail**
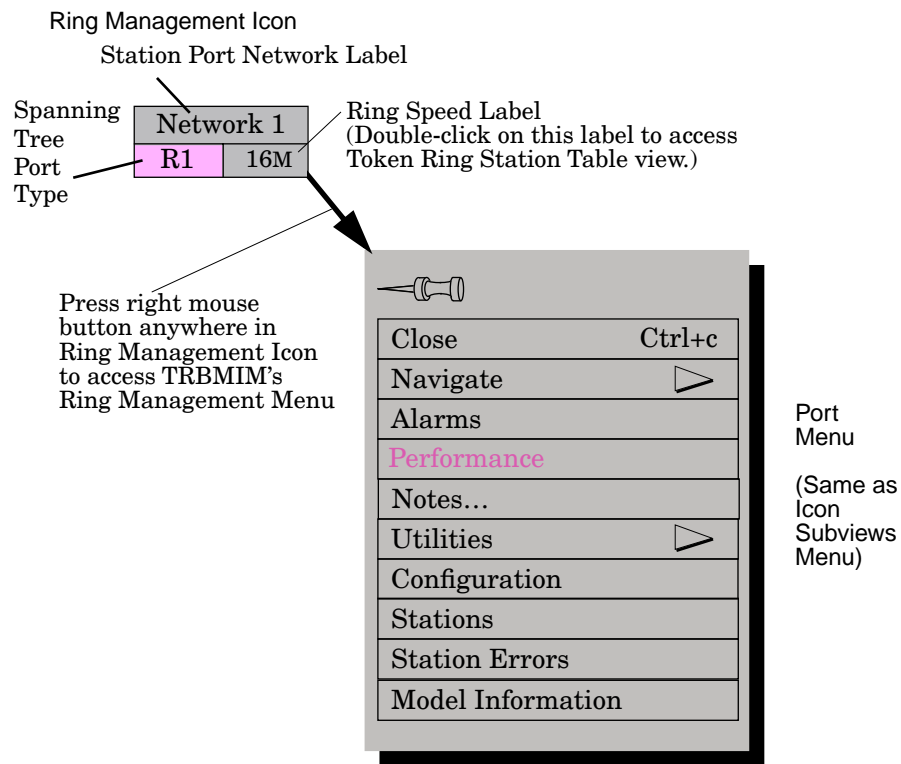
Ring label – The Ring Label, color-coded to show association with the devices managed by the TRBMIM, identifies which port the TRBMIM controls. Double-clicking on this label accesses the Device Configuration view for this device.

Ring Speed Label – The Ring Speed Label identifies the ring speed; the representation in Figure 2-9, for example, shows the associated network as operating at a speed of 16 megabits/second. Double-clicking on this label accesses the Token Ring Station Table view for this device.

Table 2-5. **Ring Management Menu Selections Accessible from Ring Management Icon**

Menu Selection	Description
Close	Closes the Logical Device view.
Navigate	Opens the Navigator submenu, allowing you to Navigate In or Up. For more information on the Navigator submenu refer to the **SPECTRUM Views** reference.

Table 2-5.   **Ring Management Menu Selections Accessible from Ring Management Icon (Continued)**

Menu Selection	Description
Alarms	Opens the Alarms view containing alarms (if any) for the model.
Performance	Opens the Performance view for the TRBMIM device. (Available only when Primary Application selection is for an application that supports the Performance view.)
Notes...	Opens the SPECTRUM Notes facility for the TRBMIM device.
Utilities	Opens the Utilities submenu, allowing you to access any SPMA or other non-core utilities you have purchased for SPECTRUM.
Configuration	Opens the Token Ring Configuration view for the device. For further information on this view and its related views, refer to *Token Ring Configuration View*, starting on page 3-15.
Stations	Opens the Token Ring Station Table view for this device.For further information on this view and its related views, refer to *Token Ring Station Table View*, starting on page 3-28.
Station Errors	Opens the Token Ring Station Isolating Errors view for this device. For further information on this view and its related views, refer to *Token Ring Station Isolating Errors Table View*, starting on page 3-32.
Model Information	Opens the Model Information view for this device.For further information on this view and its related views, refer to *Token Ring Device Model Information View*, starting on page 3-25.

Configuration & Station Table Views

What is in this Chapter

This chapter provides general descriptions of the configuration views and token ring station table views that are available for the TRBMIM. These views let you access network configuration information and modify the associated setups, as well as network traffic flow and error rates. The TRBMIM model type supports the following configuration and token ring station table views:

- Device Configuration views (see page 3-2))
- Source Route Bridge Configuration view (see page 3-8)
- Source Route Port Configuration view (see page 3-11)
- Spanning Tree Port Configuration view (see page 3-12)
- Token Ring Configuration view (see page 3-15)
- Token Ring Ring Configuration view (see page 3-18)
- Token Ring Security Configuration view(see page 3-20)
    - Modify Allowed Station List dialog box (see page 3-22)
- Token Ring Device Model Information view (see page 3-25)
- Station Table views (see page 3-28)
    - Token Ring Station Table view (see page 3-28)
    - Token Ring Station Isolating Errors view (see page 3-32)
    - Token Ring Station Non-Isolating Errors view (see page 3-34)
    - Token Ring Station Alarm Thresholds view (see page 3-35)
    - Token Ring Station Alarm States view (see page 3-37)
    - Token Ring Station Detail View (see page 3-38)
    - Station Alarms Dialogue dialog box (see page 3-40)

Device Configuration View

Opening the Device Configuration View

You can open the TRBMIM's Device Configuration view through any of the following methods:

1. Double-click in the double-click zone at the top of the TRBMIM device icon, as shown below. This action will open the Device Configuration view.

Double-click zone to open Device Configuration view

| Location View icon | Topology View icon | Off-Page Reference icon |
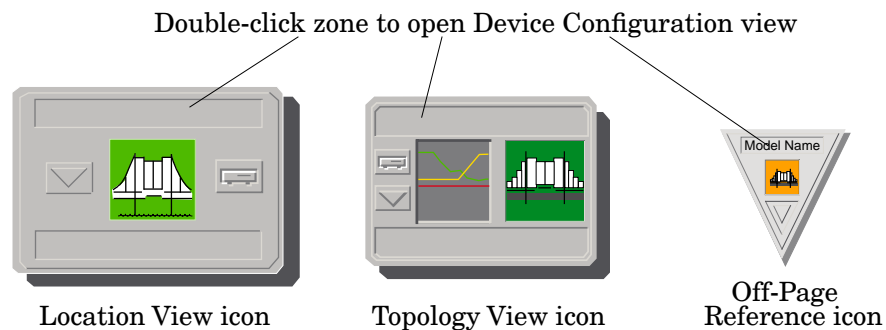
2. In your landscape view, click on the TRBMIM location view icon to highlight that icon and then pull down the **View** menu and select the **Icon Subviews -> Configuration** option.

View menu

Icon Subviews menu

Click on Configuration to open TRBMIM's Configuration view
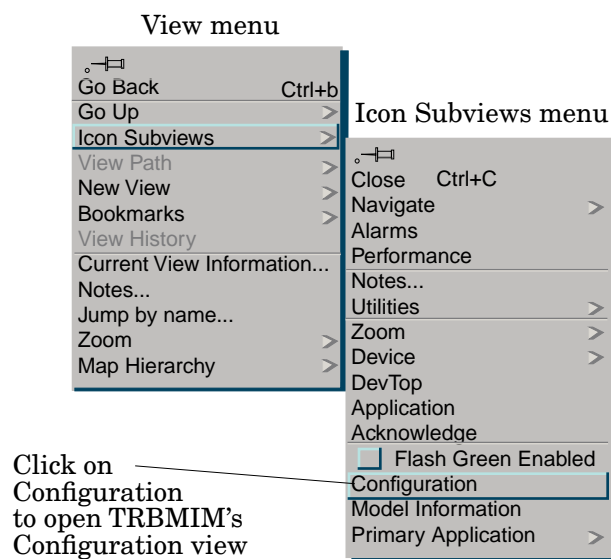
3. In the Logical Device view, double-click inside the device label on the TRBMIM's logical device application icon to open the Device Configuration view. Alternatively, you can right-click on that same icon to display the device menu, slide the cursor down to the Configuration option, and then release the mouse button.

Logical
Device
Application
icon

| 4 |
| TRBMIM |

Device Label

Double-click on label
to open TRBMIM's
Configuration view

Press right mouse
button to access
TRBMIM's device
menu

| —◁⫶◻ |
Close	Ctrl+c
Navigate	▷
Alarms	
Performance	
Notes…	
Utilities	▷
Configuration	
Stations	
Station Errors	
Model Information	

Device
Menu

(Same as
Icon
Subviews
Menu
when
Logical
Device
Application
icon is
highlighted)

Click on
Configuration
to open TRBMIM's
Configuration view

TRBMIM Device Configuration View Details

The Device Configuration view (see Figure 3-1) provides information on the configuration of the TRBMIM and lets you modify the values of some fields. In addition to the general configuration information common to most generic views, enclosed within the status border in the top part of the view, this view provides the following information:

Firmware Revision — The firmware version of the TRBMIM.

Hardware Revision — The hardware revision for the device being modeled.

Bridge Management – Specifies whether the mode is Bridging-Only or Bridging and Management. When the indication reads **Mgmt_Enabled**, the TRBMIM is set for Bridging and Management and will manage the higher-numbered boards in the hub (as displayed to its left in the Logical Device view; see Figure 2-4 on page 2-9), up to the next intelligent MIM (which in turn will manage the devices above itself). When the indication reads **Mgmt_Disabled**, the TRBMIM is set for Bridging-Only mode and will not manage any devices.

Figure 3-1. **TRBMIM Device Configuration View**

Interface Configuration Table – The lower half of the Device Configuration View displays a multi-function Interface Configuration Table, enclosed within a white border. This table lists each token-ring port and displays the applicable Interface Address, Description, Type, and Operational Status entries for each such port, as listed in Table 3-1. Selection buttons at the top of each respective category column let you determine the category of interest before you set filter conditions or sorting sequence for the listed ports,

as described below. Once you select any one of these four mutually-exclusive category selectors, it remains active until you select one of the other three category buttons.

Update

The upper left corner of the Interface Configuration Table contains an **Update** button. Click on this button to update the information being presented in the Interface Configuration Table readouts.

MAC

The **MAC** button to the right of the Update button in the upper left corner of the Interface Configuration Table is an address-format button lets you alternate the format of the interface address between MAC (default) and Canonical settings.

Sort Up

The upper right corner of the Interface Configuration Table contains a sorting-specification button, which lets you determine the sorting sequence for the token-ring ports displayed in the table. This button is not active until after one of the four column-selector category switches across the top of the table listing has been selected (that is, any one of the **Interface Address**, **Description**, **Type**, or **Operational Status** selection buttons, as described in Table 3-1). When the **Sort Up** button is active, clicking this button lets you select between **Sort Up** (default), **Sort Down**, and **Un-Sort** sequences for those listed entries, based on whichever column category concurrently is selected. Once any of these sorting options is chosen, it remains in effect until a later change is made.

Set Filter

Located just to the left of the sorting-specification button in the upper right center of the Interface Configuration Table, the filter-setup button lets you alternate between two states: **Set Filter** (default) and **Clear Filter**. As with the sort-function button, this button is not active until after one of the four category switches across the top of the table listing has been selected. If you select the Set Filter option, indicating that you want to establish a mask to reject entries containing whatever elements you specify, the program then activates a dialog box asking you to enter the applicable information pertaining to whichever column category concurrently is selected. Once either setting is chosen, it remains in effect until a later change is made.

Table 3-1.   **Interface Configuration Table Field Definitions**

Statistic	Definition
Interface Address	The interface identification address for this component. Pressing the column selector containing this designation means that any subsequent filter setting or item-sorting operation will pertain to this category until one of the other category buttons is selected.
Description	The descriptive nomenclature for this component. Pressing the column selector containing this designation means that any subsequent filter setting or item-sorting operation will pertain to this category until one of the other category buttons is selected.
Type	The type designation for this firmware component. Pressing the column selector containing this designation means that any subsequent filter setting or item-sorting operation will pertain to this category until one of the other category buttons is selected.
Operational Status	The community password. The default value for this entry is "public." Pressing the column selector containing this designation means that any subsequent filter setting or item-sorting operation will pertain to this category until one of the other category buttons is selected.

Interface Detail

The lower left corner of the Interface Configuration Table contains an **Interface Detail** button. Click on this button to access the Interface Detail view, which lets you change the interface number and administrative status (On or Off) of whichever token-ring port concurrently is selected (highlighted, with white background) on the Interface Configuration Table. If you make any changes via this view, you will be asked to confirm that you wish to commit those changes. Double-clicking on a Interface Configuration Table entry also opens this same Interface Detail view for the port associated with that entry.

Directly below the Interface Configuration Table, arranged across the bottom of the Device Configuration view, are three push-buttons that let you select additional functions, as described below.

Component Table

Click on this button to open the Component Table view. This view contains the fields and controls listed in table x and provides information on the TRBMIM components. For further information on the use of this SPMA view, refer to Chapter 3, *Using the Community Names Tool*, in the **SPECTRUM Portable Management Application Tools Guide**.

Table 3-2. **Component Table View's Field Definitions**

Field or Control	Definition
Access Community Name	The community password. The initial default value is "public" — but users are expected to change this to some user-defined value as a security measure.
ID	The identification number for given component.
Compnent Name	The name of the given component.
Read-Only	The community password for Read-Only privileges for the TRBMIM model. The default entry is a "public" value.
Read-Write	The community password for Read-Write privileges for the TRBMIM model. The default entry is a "public" value.
Super-User	The community password for Super-User privileges for the TRBMIM model. The initial default value is "public" — but users are expected to change this to some user-defined value as a security measure.
Component Status	Mutually-exclusive selection between **Enable** or **Disable** options.
Select All	Selects all Component Table entries simultaneously.
Refresh	Reads in Component Table entries to determine if changes have been made since last read.
Quit	Closes the Compnent Table view.

Download Application

Click on this button to access the TFTP Download function, an SPMA application that lets you upgrade the TRBMIM firmware from a TFTP Boot or from a Bootp Server. For more information on this function, refer to Chapter 5, "Using the SPMA TFTP Download Tool" in the *SPECTRUM Portable Management Application Tools Guide*.

Trap Table

Click on this button to access the Trap Table function, an SPMA application that lets you enable and disable traps and specify the IP address of the management workstation that receives and processes the trap messages. For more information on this function, refer to Chapter 6, "The Trap Table Tool" in the *SPECTRUM Portable Management Application Tools Guide*.

Other Configuration Views

Source Route Bridge Configuration View

Opening the Source Route Bridge Configuration View

If you highlight the TRBMIM's Bridging icon in the Logical Device view, you can access the Source Route Bridge Configuration view either by (1) right-clicking in that label to open the device menu and then selecting the Source Route Configuration option or else by (2) pulling down the **File** menu from the manu bar and selecting the File > Icon Subviews > Source Route Configuration option.

Press right mouse
button to access
TRBMIM's device
menu

Logical Device
Bridging
Icon

Bridging

Close	Ctrl+c
Navigate	▷
Alarms	
Performance	
Notes…	
Utilities	▷
Source Route Configuration	
Source Route Statistics	
Spanning Tree	

Device
Menu

(Same as
Icon
Subviews
Menu
when
Bridging
icon is
highlighted)

Click on **Source Route
Configuration** to open
Source Route Configuration
view
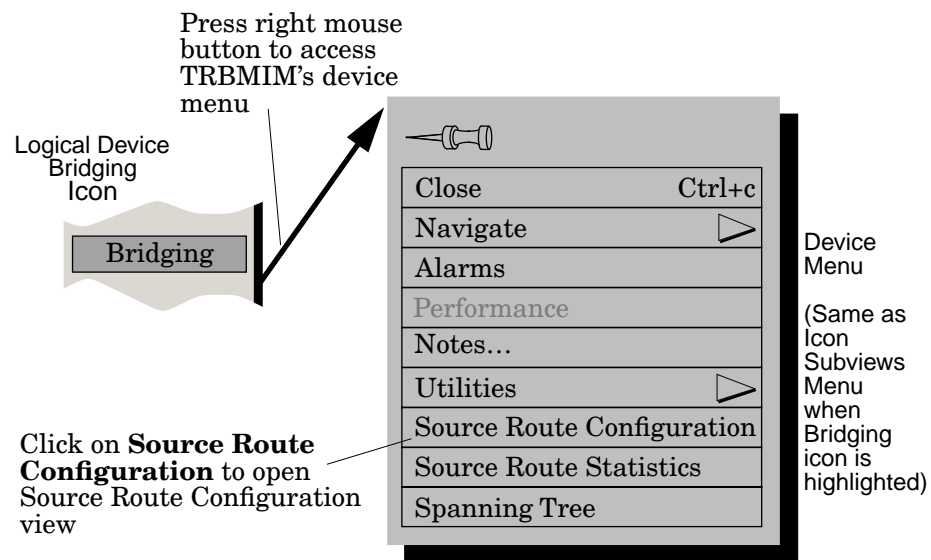
Alternatively, if you are in the Application view, you can click on the Source_Rt_App icon with the left mouse button to highlight that icon, then pull down the **File** menu and select its **Icon Submenus** option, and then select the **Configuration** option from the resulting submenu. Conversely, you can click on that same Source_Rt_App icon with the middle mouse button to activate a replica of the **Icon Submenus** menu and then select the **Configuration** option on that menu.

Source Route Bridge Configuration View Details

In addition to the general configuration information common to most generic views, enclosed within the status border in the top part of the view, the Source Route Bridge Configuration view (see Figure 3-2) provides information on the configuration of the associated port and lets you modify the values of some fields. This view provides the following information:

Figure 3-2.   **Source Route Bridge Configuration Table View**

The Source Route Bridge Configuration view provides the following information:

Port — This field displays the number of the port containing Source Route management information.

Bridge Number – This field displays the number uniquely identifying the bridge when more than one bridge is used to span the same two segments.

Ring In Number – This field displays the number that uniquely identifies the segment to which this port is connected.

Ring Out Number – This field displays the segment number that corresponds to the target segment this port is considered to be connected to by the bridge.

Hop Count – This field displays the number of routing descriptors allowed in an All Paths or Spanning Tree Explorer frame.

Largest Frame – This field displays the maximum size of the INFO field that this port can send or receive.

STE Span Mode – This field lets you determine how the port behaves when presented with a Spanning Tree Explorer frame. When disabled, the port will not send or receive any Spanning Tree Explorer packets.

In addition, the Source Route Configuration view also provides three convenient controls:

Sort

The **Sort** button, which is normally inactive (grayed out), becomes active when you click any one of the column-heading labels in the Source Route Bridge Configuration Table (that is, **Port**, **Bridge Number**, etc.); if you then click on this **Sort** button while it is active, the system sorts the row entries in accordance with the entries in whichever column you clicked to activate the button.

Find

When this "generic" view is used with certain other SPECTRUM modules, the **Find** button can provide enhanced seaching funcitonality for a specific address, etc.,but this functionality is not implemented for the TRBMIM and this button is grayed out (inactive).

Update

Clicking on the **Update** button updates the data contents of the Source Route Bridge Configuration Table.

Double-clicking on any entry in the Source Route Bridge Configuration Table view opens the Source Route Port Configuration view for whichever port is associated with that entry. For further information concerning that view, refer to the following section.

Source Route Port Configuration View

Opening the Source Route Port Configuration View

Double-clicking on any entry in the Source Route Bridge Configuration Table view opens the Source Route Port Configuration view for whichever port is associated with that entry.

Source Route Port Configuration View Details

The Source Route Port Configuration view (see Figure 3-3) provides information on the configuration of the associated port and lets you modify the values of some fields. This view provides the following information:

Figure 3-3.   **TRBMIM Source Route Port Configuration View**

Port Number – This field displays the number of the port containing Source Route management information.

Bridge Number – This field displays the number uniquely identifying the bridge when more than one bridge is used to span the same two segments.

Ring In Number – This field displays the number that uniquely identifies the segment to which this port is connected.

Ring Out Number – This field displays the segment number that corresponds to the target segment this port is considered to be connected to by the bridge.

Maximum Hop Count – This field displays the number of routing descriptors allowed in an All Paths or Spanning Tree Explorer frame.

Largest Frame Size – This field identifies the maximum size of the INFO field that this port currently can send or receive. You can highlight this entry and substitute any desired higher or lower value; the program will round your entry up or down (depending on the associated device) to the nearest applicable value defined by the IEEE 802.5M SRT Addendum. The bridge uses this value to determine if modification of the LargestFrame field of the Routing Control field of the Routing Information Field is necessary.

STE Span Mode

The **STE Span Mode** button determines how the current port will behave when presented with a Spanning Tree Explorer frame. Clicking on this button causes the system to display a pop-up list of three allowed values, as follows:

Auto-Span – This selection can be returned only by a bridge that both implements the Spanning Tree protocol and also has use of the protocol enabled on this port. Given these conditions, the frame will accept or propagate a frame if the port is in the forwarding state; otherwise, the port will silently discard the frame.

Disabled – This selection means that the port will not send or receive any Spanning Tree Explorer packets, which instead will be silently discarded.

Forced – This selection means that the port will always accept and propagate Spanning Tree Explorer frames. (This allows a manually configured Spanning Tree for this class of packet to be configured. Unlike transparent bridging, this is not catastrophic to the network if there are loops.)

When you select the desired spanning mode, the mode name displayed as the new button readout, remaining in effect until a different mode is selected.

Spanning Tree Port Configuration View

Opening the Spanning Tree Port Configuration View

If you highlight either Logical Port icon area in the Logical Device icon for the TRBMIM in the Logical Device view, you can access the Spanning Tree Port Configuration view (see Figure 3-4) by any of three methods: (1) double-click inside the status label on the Logical Port icon, (2) press the right mouse button and then select the Port Configuration option on the displayed device

menu, or (3) pull down the **View** menu from the window menu bar and select the **View > Icon Subviews > Port Configuration** option.

Logical
Port
icons

Double-click
on status label
to open the
Spanning Tree
Port Configuration
view for that
port

STATION

TR   FWD

FNB

TR   FWD

Press right mouse
button in desired
Logical Port icon
to get Device menu
for respective port

Close	Ctrl+c
Navigate	▷
Alarms	
Performance	
Notes…	
Utilities	▷
Port Configuration	
Port Performance	
Port Model Information	

Device
Menu

(Same as
Icon
Subviews
Menu
when
Logical
Port
icon is
highlighted)

Click on
Port Configuration
to open Spanning Tree
Port Configuration view
for port associated with
highlighted Logical Port icon
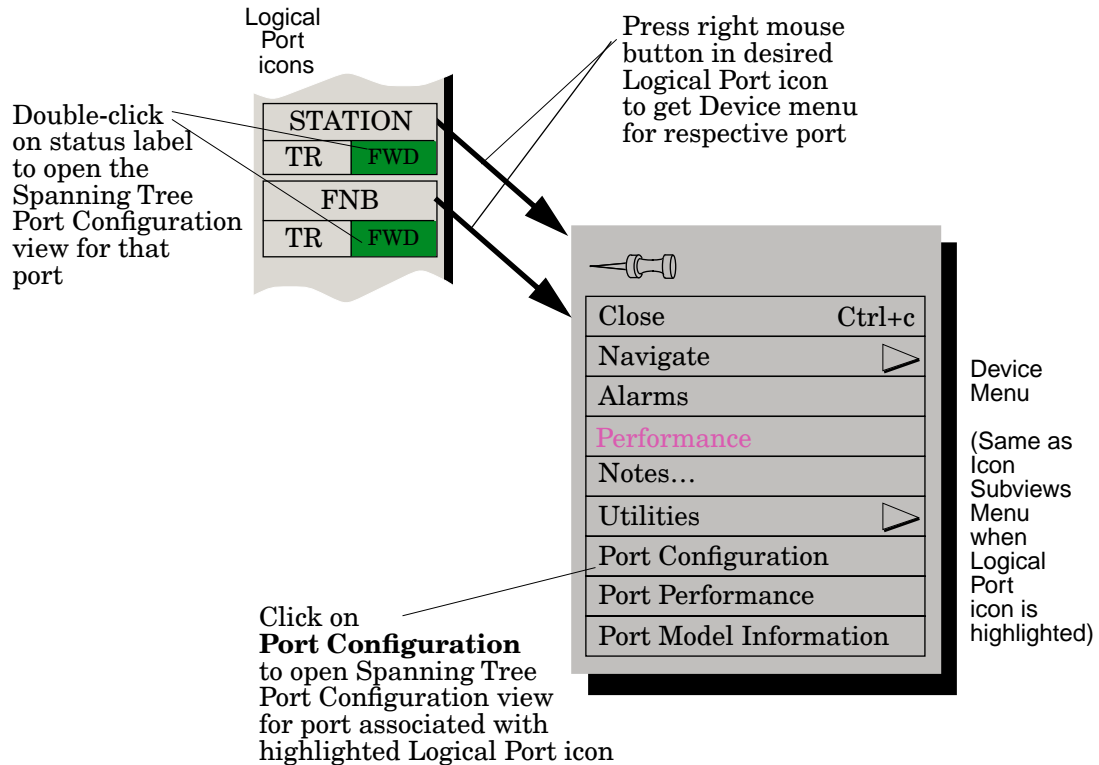
Spanning Tree Port Configuration View Details

The Spanning Tree Port Configuration view provides information on the configuration of the associated port and lets you modify the values of some fields. This view provides the following information:

Port Number – The number of this spanning tree port.

Port Status

The **Port Status** button identifies whether the associated spanning tree port currently is **Enabled** or **Disabled**. Clicking on the button produces a two-selection menu that lets you select the alternate state or leave the current state in place.

Port Priority – The network port priority, which is one of the values used by the Spanning Tree algorithm to choose a root for the TRBMIM. A lower

number indicates a higher priority. The default is 80; the allowable range is 0 to 255.

Figure 3-4. **TRBMIM Spanning Tree Port Configuration View**

Port Path Cost – The portion of the total path cost that is associated with this port. In a parallel bridge network, the Spanning Tree algorithm selects the bridge with the lowest path cost as the root bridge. The allowable range for the path cost is 1 to 65535. The default value is 20.

Port State – The state of this station port. Table 3-3 provides possible port states and definitions.

Designated Root – The bridge identifier, recorded as the root in the Configuration BPDUs transmitted by the Designated Bridge (for the segment to which this port is attached.) This value is used as the Root Identifier parameter in all Bridge Configuration PDUs originated by this node.

Designated Cost – The path cost of the Designated Port of the segment connected to this port.

Designated Bridge – The ID of the bridge that is assumed to be the root bridge on the network.

Designated Port – The number of the port that offers the lowest path from the TRBMIM to the root bridge.

Forward Transitions − The number of times the port has changed from the learning state to the forwarding state.

Table 3-3. **Spanning Tree Port States and Definitions**

State	Definition
Disabled	Management has disabled the port. No traffic can be received or forwarded while the port is disabled.
Learning	The device is learning network addresses. This occurs when the device's Acquired Database is being created during start-up or reconfiguration.
Listening	The device is not adding information to the Filtering Database but is monitoring BPDU traffic while preparing to move from the Learning state to the Forwarding state.
Forwarding	The device is on-line and this port is forwarding traffic.
Blocking	The port will not forward any traffic.
Broken	The port is malfunctioning.

Token Ring Configuration View

Opening the Token Ring Configuration View

If you highlight either Logical Port icon area (FNB or Station) in the Logical Device icon for the TRBMIM in the Logical Device view, you can access the Spanning Tree Port Configuration view (see Figure 3-4) by any of three methods: (1) double-click inside the status label on the Logical Port icon, (2) press the right mouse button and then select the Port Configuration option on the displayed device menu, or (3) pull down the **View** menu from the window menu bar and select the **View > Icon Subviews > Port Configuration** option.

Ring
Management
icons

Press right mouse
button in desired
Ring Management
icon to get Device menu
for respective port

Double-click
on Token Ring
Port Type icon
to open Token
Ring Configuration
view for that
port

Network 1	
R1	16M
Network 2	
R2	16M

Close	Ctrl+c
Navigate	▷
Alarms	
Performance	
Notes…	
Utilities	▷
Configuration	
Stations	
Station Errors	
Model Information	

Device
Menu

(Same as
Icon
Subviews
Menu
when
Ring
Management
Port
icon is
highlighted)

Click on
Configuration
to open Token Ring
Configuration view
for port associated with
highlighted Port Type icon
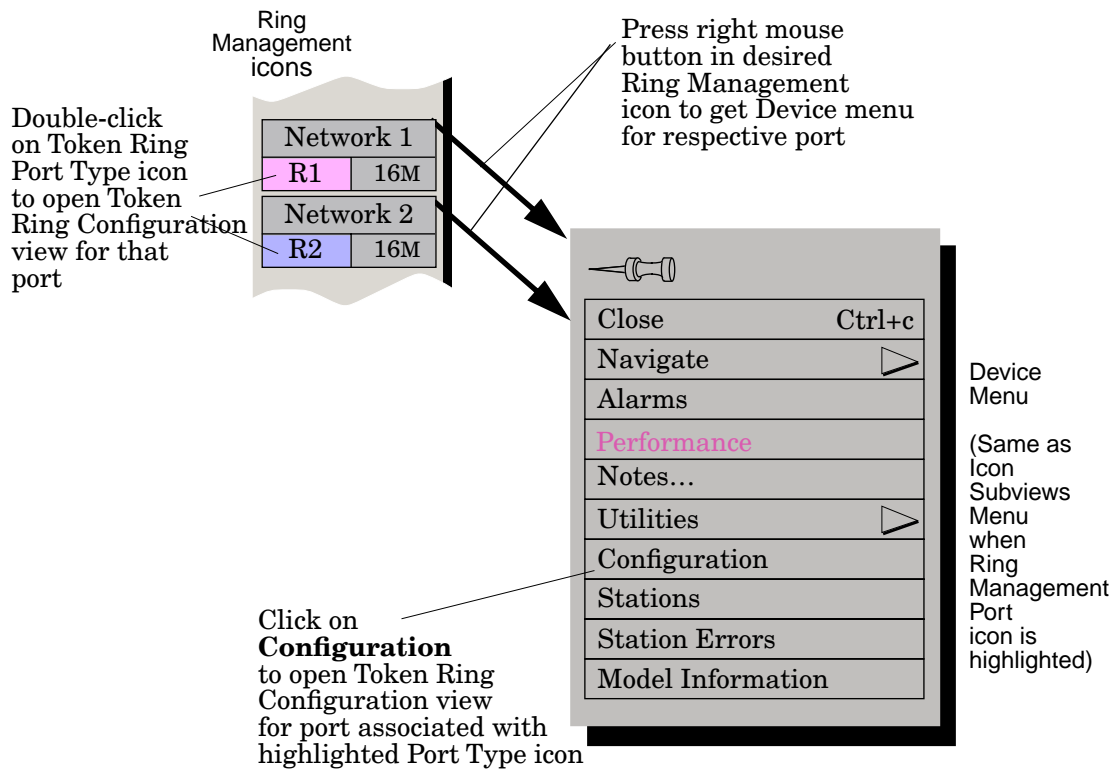
Alternatively, if you are in the Application view, you can highlight either the
CtTokenRingApp icon or the HubCSITR icon with the right mouse button to
open the device menu and then select its **Configuration** option, or you can
highlight either of those same icons with the left mouse button and then pull
down the File menu from the menu bar and select the **File > Icon Subviews
> Configuration** option on that menu.

Token Ring Configuration View Details

In addition to the general configuration information common to most generic
views, enclosed within the status border in the top part of the view, the Token
Ring Configuration view (see Figure 3-5) provides information on the
configuration of the associated token ring network and lets you modify the
values of some fields. This view provides the following information:

Figure 3-5.   Cabletron Token Ring Configuration View

Ring Name – The ASCII name assigned to this ring. This name defaults to *Network n*, where *n* is a unique integer value.

Ring Number – The number of the attached ring. If SPECTRUM cannot determine the number of the ring, a zero is returned.

Ring Speed – The speed of the ring, which can have a value of 4 or 16 megabits.

Ring Status – The operational state of the ring. Depending on the current general operational state of the ring, this value will be any one of **Normal**, **Closed**, **Purge**, **Contention**, **Beaconing**, **Lobe Fail**, or **Unknown**.

Directly below the just-described row of readouts, a **Port Configuration** block presents the following information and controls pertaining to the configuration of the device ports:

Station Ports ON Out Of – Defines the total number of enabled station ports on the addressed module.

Ring Ports ON Out Of – The total number of enabled ring-in/ring-out ports in this port group.

Enable All Station Ports

This button lets you enable all station ports in this port group by setting the value to **Enable**. The default value is **NoEnable.**

Enable All Ring Ports

This button lets you enable all ring ports in this port group by setting the value to **Enable**. The default value is **NoEnable**.

In addition, three push-buttons on the right-hand side of the Port Configuration area provide access to three other important views:

– Ring Configuration –

Clicking on this button opens the Token Ring Ring Configuration view./ For further information on that view, refer to *Token Ring Ring Configuration View*, starting on page 3-18.

– Ring Security –

Clicking on this button opens the Token Ring Security Configuration view. For further information on that view, refer to *Token Ring Security Configuration View*, starting on page 3-20.

– Alarms Table –

Clicking on this button opens the Token Ring Station Alarm Thresholds Table view. For further information on that view, refer to *Token Ring Station Alarm Thresholds View*, starting on page 3-35.

Token Ring Ring Configuration View

Opening the Token Ring Ring Configuration View

Clicking on the **Ring Configuration** button in the Token Ring Configuration view (see Figure 3-5 on page 3-17) opens the Token Ring Ring Configuration view. In addition to the general configuration information common to most generic views, enclosed within the status border in the top part of the view, this view provides information about the configuration of the associated token ring network(s), including several elements of possible alarms concerned with the ring, together with push-buttons associated with some of these elements. You can modify the values of the fields that are displayed in this view in bold print.

Token Ring Ring Configuration View Details

The **Ring Configuration** section, located on the left side of the Token Ring Ring Configuration view, displays the following information:

Ring Name – The ASCII name assigned to this ring. This name defaults to *Network n*, where *n* is a unique integer value.

Ring Number – The number of the attached ring. If SPECTRUM cannot determine the number of the ring, a zero is returned.

Ring Speed – The speed of the ring, which can have a value of 4 or 16 megabits.

Ring Status – The operational state of the ring.

Active Monitor – The MAC address of the active monitor for the ring. This address will appear in any tables with an asterisk (*) to identify it.

Active Stations – The number of active stations currently inserted on the ring.

Beacon Recovery

The Beacon Recovery button lets you enable or disable automatic beacon recovery for the TRBMIM. If you click on this button, the system displays a three-option pop-up menu, letting you select between **Enabled**, **Disabled**, and **Invalid**; the button readout identifies whichever selection is currently in effect. When this button is in its **Disabled** state, the TRBMIM will not attempt to reinsert itself into the ring after entering a beaconing state. If the device does not support automatic beacon recovery, SPECTRUM will display a status of **Invalid**.

The **Ring Alarm/Threshold/State** section, located on the left side of the Token Ring Ring Configuration view, has three columns, displaying information on the ring alarms, their current thresholds, and their states (Enabled or Disabled). You can change the threshold settings by typing new values into the **Threshold** fields. In addition, the state designations are really readouts on two-position push-buttons, and you can change each alarm to its alternate state by clicking on the button. The applicable ring alarms are as follows:

Ring Purges – The threshold field lets you set a value for the Ring Purges alarm threshold. The associated state button lets you **Enable** or **Disable** detection of this alarm.

AMP Errors – The threshold field lets you set a value for the Active Monitor Error alarm threshold. The associated state button lets you **Enable** or **Disable** detection of this alarm.

Claim Token Errors – The threshold field lets you set a value for the Claim Token Errors alarm threshold. The associated state button lets you **Enable** or **Disable** detection of this alarm.

Lost Frames – The threshold field lets you set a value for the Lost Frames alarm threshold. The associated state button lets you **Enable** or **Disable** detection of this alarm.

Token Errors – The threshold field lets you set a value for the Token Errors alarm threshold. The associated state button lets you **Enable** or **Disable** detection of this alarm.

Beacon State – The threshold field lets you set a value for the Beacon State alarm threshold. The associated state button lets you **Enable** or **Disable** detection of this alarm.

Frame Count – The threshold field lets you set a value for the Frame Count alarm threshold. The associated state button lets you **Enable** or **Disable** detection of this alarm.

One final field at the bottom of this view, **Ring Timebase**, lets you set the timebase for getting and setting all alarms for this ring. This value is measured in seconds.

Token Ring Security Configuration View

Opening the Token Ring Security Configuration View

Clicking on the **Ring Security** button in the Token Ring Configuration view (see Figure 3-5 on page 3-17) opens the Token Ring Security Configuration view.

Token Ring Security Configuration View Details

The Token Ring Security Configuration view provides information about the security configuration for the ring and lets you modify the values of some fields. You can modify the values of the fields having labels that are displayed in this view in bold print.

A highlighted bar across the top of the views provides the following four readout fields:

Ring Name – The ASCII name assigned to this ring. This name defaults to *Network n*, where *n* is a unique integer value.

Ring Number – The number of the attached ring. If SPECTRUM cannot determine the number of the ring, a zero is returned.

Ring Status – The operational state of the ring.

Ring Speed – The speed of the ring, which can have a value of 4 or 16 megabits.

Administration State

The **Administration State** button lets you select the security administration state for the TRBMIM. When the readout on this button designates the ring as being in the **EnabledWithAlarms** state, SPECTRUM will generate an alarm upon insertion of an illegal station into the ring. When the indication is **EnabledWithRemoveAndAlarm**, SPECTRUM generates an alarm and also removes the illegal station from the ring. Finally, selecting the **Disabled** state turns off security for the TRBMIM.

A blocked off area below the **Administration State** control button contains a table that identifies the **Interface** designation and the **Allowed Station Address** value for all stations allowed on the ring. The station that is the active monitor for the ring is indicated by an asterisk (*) beside the address. Double-clicking on any table line entry in the table opens the Modify Allowed Station List dialog box, described in *Modify Allowed Station List Dialog Box*, starting on page 3-22.

The blocked-off table area contains the following seven push-buttons:

Update

The **Update** button updates the contents of the Station Address Table.

MAC/Canonical

The **MAC/Canonical** button toggles the station address display format between **MAC** (Physical) and **Canonical** (Ethernet) forms. The readout on this button always designates the alternate state (that is, the one that is not currently selected, but which will become selected if you click on the button).

Set/Clear Filter

The **Set/Clear Filter** button lets you set a filter affecting the interfaces/ stations displayed in the table. The readout on this button always designates the alternate state (that is, the one that is not currently selected, but which will become selected if you click on the button). You select an attribute to filter against by clicking one of the column-heading buttons (that is, **Interface** or **Allowed Station Address**).

Sort Up/Sort Down/Un-Sort

The **Sort Up/Sort Down/On-Sort** button lets you sort the interfaces or station addresses displayed in the table. You select an attribute to sort on by clicking one of the column-heading buttons (that is, **Interface** or **Allowed Station Address**). When you click on this button, a pop-up menu appears, letting you select the desired setting.

Interface

The **Interface** button, located directly above the Interface column in the displayed table and constituting its label, provides a list of the available

interface numbers. Selecting this button lets you designate one of the interface values presented as the target for operations initiated by the **Set Filter** and **Sort** buttons.

| Allowed Station Address |

The **Allowed Station Address** button. located directly above the **Allowed Station Address** column in the displayed table and constituting its label, provides a list of the station addresses. Selecting this button lets you use the Set Filter and Sort buttons on the station addresses presented.

| Modify Allowed Station List |

The Modify Allowed Station List button, located below the table, opens the Modify Allowed Station List view, which is described the following section.

Total Allowed Stations – This field identifies the total number of stations currently included in the *Allowed Stations* list.

Modify Allowed Station List Dialog Box

Opening the Modify Allowed Station List Dialog Box

You can access the Modify Allowed Station List dialog box by clicking on the Modify Allowed Station List button in the Token Ring Security Configuration View (refer to *Token Ring Security Configuration View*, starting on page 3-20). Alternatively, you can also open this same dialog box by double-clicking on any table entry in that Security Configuration view.

Modify Allowed Station List Dialog Box Details

⚠ **CAUTION** *Do not attempt to modify ring security without first having a complete understanding of Token Ring concepts and the TRBMIM device. Removal of the station acting as the connecting bridge from the Ring Security Allowed Station List can cause isolation from the ring.*

The Modify Allowed Station List dialog box lets you modify the security for the ring by adding or removing stations from the ring's list of allowed stations.

This dialog box provides the following functions:

The top section of the dialog box, labeled **Security Administration State**, lets you choose the level of security for the ring. You may only select one

mutually exclusive option at a time by clicking on the applicable button, as follows:

Disable

This security option disables ring security, allowing all stations on the ring.

Enable with Alarm

This security option enables ring security with the condition that any station entering the ring will generate an alarm unless it is on the secure list. The device will place the station address on the Allowed Stations list.

Enable with Remove and Alarm

This security option enables ring security with the condition that any station not on the secure list and that enters or currently resides on the ring will generate an alarm and be removed from the ring.

The middle portion of the dialog box contains two scroll lists (**Allowed Stations** and **Disallowed Stations**), together with associated buttons that let you move station addresses back and forth between these two scroll lists, as well as to add or delete stations from the ring. The left-hand **Allowed Stations** list displays the list of stations currently allowed on the ring. Double-clicking on any item in that list will move it to the right-hand **Disallowed Stations** scroll list, except that you cannot move a station from the **Allowed Stations** list if the security for that station address is set to *Enable with Alarm*. Alternatively, you can highlight any station address in the Allowed Stations list and then click on the **>** button to move it to the **Disallowed Stations** list (again, you cannot move the station address if its address is set for the *Enable with Alarm* state, and the > button remains grayed out (inactive). If you move an address to the **Disallowed Stations** list, the **>** label becomes active, with that condition remaining in effect until you click on the **Apply** button to implement the change(s).

The right-hand **Disallowed Stations** scroll list acts as a scratch pad or buffer to store addresses currently disallowed on the ring, but which you may want to move to the **Allowed Stations** list in the future. The ring does not read this buffer to deny ring access to certain stations; instead, the ring denies access to all stations not explicitly included in the **Allowed Stations** scroll list. Double-clicking on an item in the **Disallowed Stations** list will move it to the **Allowed Stations** list. The normally inactive (grayed out) < button becomes active when you make any such change, with this condition remaining in effect until you click on the **Apply** button to implement the change(s).

>

Unless the security for a given station in the Allowed Stations list has been set for Enable with Alarm state, highlighting that station address and then clicking on the **>** button will move the selected station from the **Allowed Stations** list to the **Disallowed Stations** list. The > symbol then remains

active to indicate that the station has recently been moved to the **Disallowed Stations** list, with the condition remaining in effect until you click on the **Apply** button to implement the change(s). You cannot move a station from the **Allowed Stations** window if its security is set to *Enable with Alarm*.

<

Highlighting any station address entry in the **Disallowed Stations** list and then clicking on the **<** button will move the selected station from the **Disallowed Stations** list to the **Allowed Stations** list. The **<** symbol on the button will remain active until the change is applied when you subsequently click on the Apply button.

ADD

The **ADD** button lets you add a new station. The station address must be added in valid hex MAC address format, using valid separators — the colon (:), period (.), and dash (-). You can add the new station either to the **Allowed Stations** scroll list or to the **Disallowed Station** scroll list by selecting the appropriate option in the Add Station to List dialog box that appears when you click on the **ADD** button. That secondary dialog box provides an entry field for identification of the address for the new station, provides a mutually exclusive selection between **Allowed List** and **Disallowed List** options, and then lets you make a final choice between **Apply** (which adds the entered station address to the designated list) or **Cancel** (which exits from the secondary dialog box without effecting any changes). Any recently added station address will be accompanied by a "plus" symbol (+), which will remain in effect until the addition is finalized by clicking on the **Apply** button in the Modify Allowed Station List dialog box. Selecting a recently added that is marked with a + symbol and then clicking on the **DELETE** button will remove it from the scroll list.

DELETE

The **DELETE** button lets you remove the selected station (*Refer to the CAUTION note at the beginning of this section*). You may remove any station address except that address belonging to the bridging device itself, and except for any station in the **Allowed Stations** scroll list that currently is set for an *Enable with Alarm* security state. A minus symbol (-) accompanying an address entry in either scroll list indicates that the station has been marked for removal, and this symbol will remain in effect until the changes are finalized by subsequent clicking on the **Apply** button, at which time the station is actually removed from the scroll list. Selecting the station and clicking on the **ADD** button will remove the minus symbol and unmark the station for removal. This button will also remove a recently added station marked with the + symbol.

Delete All Allowed Stations

The **Delete All Allowed Stations** button lets you remove all of the stations in the **Allowed Stations** scroll list (*Refer to the CAUTION at the beginning of*

this section). A minus symbol (-) becomes added to all of the items in the scroll list, indicating that the stations have been designated for removal, and this condition will remain in effect until the changes become implemented by subsequent activation of the **Apply** button, at which time the stations are actually removed from the scroll list. This option will remove all station addresses except that address belonging to the device itself. Selecting a station and clicking on the **ADD** button will remove the minus symbol, unmarking that station for removal.

| Apply |

The **Apply** button applies all changes made to the **Allowed Stations** and **Disallowed Stations** scroll lists, writing the list from the **Allowed Stations** scroll list to the device and writing the list from the **Disallowed Stations** scroll list to SPECTRUM, and removing all interim indicator markings from any modified stations.

| Read |

The **Read** button updates the **Allowed Stations** and **Disallowed Stations** scroll lists by reading the saved values from both the device and SPECTRUM. This action resets any changes you made to either scroll list but did not *apply*.

| Cancel |

The **Cancel** button lets you exit you from the Modify Allowed Station List dialog box. Only changes that have been *applied* by previous activation of the **Apply** button will be saved.

Token Ring Device Model Information View

The Token Ring Device Model Information view provides attribute and configuration information for the Token Ring Device Model, and lets you modify the values of some fields.

Opening the Token Ring Device Model Information View

To open the Token Ring Device Model Information view from the Icon Subviews in the Device view by first selecting the Ring icon on the TRBMIM and then selecting **Model Information**. You can also access this view by clicking on the CtTokenRingApp, HubCSITR, or CtTokenRingMgt icon in the Applications view and selecting **Model Information** from the Icon Subviews menu.

Token Ring Device Model Information View Details

The **General Information** area of the Token Ring Device Model Information view provides general information pertaining to the Token Ring device model including contact status values, model condition values, connector count values, and rollup threshold values.

MM Name – The management module's name.

MM Version Number – The version number of the TRBMIM management module.

Model Type – The type of SPECTRUM model (e.g., BdgCSITRBM).

Model Creation Time – The time and date that the Token Ring device model was created.

Model Created By – The user identification of the user that created the Token Ring device model.

Model State – The current state of the model. There are six possible values: Initial, Active, Creating, Error, Destroyed, or Unknown.

Security String – The assigned SPECTRUM security level for this Token Ring model.

Condition – The current contact condition of the TRBMIM model. There are six possible values: Blue, Green, Yellow, Orange, Red, or Gray, having the respective meanings defined in Table 3-4.

Condition Value – A value corresponding to the possible conditions. There are seven possible values:
0 = Green, 1 = Yellow, 2 = Orange, 3 = Red, 4 = Blue, 5 = Gray, or 6 = Initial.

Contact Status – The status of the TRBMIM. There are three possible values: Established, Lost, or Initial.

Lost Child Count – The number of subordinate models below another model that have lost contact with their devices.

Value When Yellow – The value that will be assigned to the condition value when the Token Ring device model has a yellow condition. You can change this value.

Value When Orange – The value that will be assigned to the condition value when the Token Ring device model has an orange condition. You can change this value.

Value When Red – The value that will be assigned to the condition value when the Token Ring device model has a red condition. You can change this value.

Table 3-4. **Contact Status Color Definitions**

Color	Contact Status	Significance of Color Designation
Blue	Initial	No contact with the TRBMIM has occurred.
Green	Device Contacted	Contact has been made with the TRBMIM, and the device is operational. If *Flashing Green* has been enabled for the device, the color flashes, indicating an alarm has occurred on the device and has been cleared.
Yellow	Minor Alarm	A duplicate IP address and/or physical (Ethernet0) address has been detected. Some traps may also generate this alarm. For information on the cause of any specific alarm, go to the Alarms View for the device.
Orange	Major Alarm	Information cannot be retrieved via the device's local management software. Some traps may also generate this alarm. For information on the cause of any specific alarm, go to the Alarms View for the device.
Red	Lost Contact	SPECTRUM can no longer contact the TRBMIM.
Gray	Suppressed	SPECTRUM cannot contact the TRBMIM; the device has unknown status because of a cable or intermediate device failure, or polling has been disabled.

The **Communication Information** area of the Model Information view provides Device Communications Manager (DCM) time-out and retry values, and the community name.

DCM Timeout – The time, in thousandths of a second, between retry attempts to the Token Ring device that will be performed after a failure has occurred. The default value is 3000 (hence, a 3-second interval).

DCM Retry – The number of times that the DCM will attempt to contact the Token Ring device after a failure has occurred. The default value is 3.

Community Name – The SNMP community name that has been assigned to the Token Ring device.

Mgmnt Protocol – The protocol that is being used to manage the TRBMIM (SNMP, ICMP, or EPI).

The Poll/Log Information area of the Token Ring Device Model Information view provides information on the model's polling and attribute configuration.

Poll Interval – The time interval, in seconds, that SpectroSERVER will read all attributes of the TRBMIM model that are flagged as "POLLED."

> **Polling Status**

The Polling Status button allows an administrator to disable SpectroSERVER polls of a device by setting Polling Status to FALSE. This is useful to disable rollup conditions for minor network events such as a workstation power-down.

Last Successful Poll – The date and time that the SpectroSERVER last successfully polled the Token Ring device model.

Log Ratio – The number of SpectroSERVER polls of a device that occur prior to logging the poll results in the database.

The **Attribute List** area displays the attributes available for the TRBMIM that can have their Attribute Extension Flags set to "Logged" or "Polled." For information on this procedure, refer to the *SPECTRUM Model Type Editor Guide*.

Token Ring Station Table Views

The TRBMIM device also provides an inter-related set of table views pertaining to the stations on the ring. Most of these are modifications of an associated table view, but a few can be accessed independently. In general, these table views have common features, including the common provision to related dialog boxes, which can be accessed from any one of these views. Consequently, the following discussion describes the first such table view in detail, with the descriptions for the other table views being limited to those features which are unique to that particular table view.

Token Ring Station Table View

Opening the Token Ring Station Table View

To open the Token Ring Station Table view, you can highlight the R1 or R2 Spanning Tree Port Type label in the applicable Ring Management icon on the Logical Device view, or the HubCSITR icon in the DevTop view, or either the CtTokenRingApp icon or the HubCSITR icon in the Application view, and then select the **Icon Subviews > Stations** option.

> **NOTE**
>
> *If you try to open the Station view from the Ring-1 icon or the CtTokenRingApp model when nothing is connected to the Station port, a dialog box will appear, displaying an* "Error Invoking Action" *message.*

Token Ring Station Table View Details

In addition to the general configuration information common to most generic views, enclosed within the status border in the top part of the view, the Token Ring Station Table view displays a Station Table containing information for all stations directly connected to the TRBMIM device, control buttons to manipulate the information in the table, and selection buttons to access other views pertaining to related information.

A highlighted band located directly below the view name, and also common to all of the related table views, provides the following information:

Ring Name – The ASCII name assigned to this ring. This name defaults to *Network n*, where *n* is a unique integer value.

Ring Number – The number of the attached ring. If SPECTRUM cannot determine the number of the ring, a zero is returned.

Ring Speed – The speed of the ring, which can have a value of 4 or 16 megabits.

Ring Status – The operational state of the ring.

In addition, the following field appears below the just-discussed highlighted band:

Active Monitor – This readout gives the MAC address of the active monitor for the ring. (The station address of the monitor can be identified in any of the table views listings, regardless of whether the table is set for the MAC or Canonical address formats, by the appearance of an asterisk (*) directly following the address entry).

The blocked-off **Station Table** area in the lower half of the Token Ring Station Table view provides the following information as column entries, with each row associated with a specific station. In each case, the column heading for this information is designated by the readout of a selection button that you can press to identify this column as the column of interest before using the sort-function or filter-function buttons, as described below.

Station Address

The address of the station to which the information in the line entry pertains.

Station Name

The ASCII name assigned to the station to which the information in the line entry pertains.

Frames

The total number of frames that have been received/generated by the station to which the information in the line entry pertains.

| Errors |

The total number of errors that have been detected on the ring by the station to which the information in the line entry pertains.

| Module |

The slot number of the token ring module connected to the station to which the information in the line entry pertains.

| Port |

The number of the port on the token ring module connected to the station to which the information in the line entry pertains.

The blocked-off **Station Table** area also includes five buttons, arranged across the top of the table, that can affect the information being displayed in the table at any given time:

| Sort Up/Sort Down/Un-Sort |

The button in the upper right corner of the blocked-off **Station Table** area is a three-selection button that lets you sort the entries displayed in the table. This button is inactive (grayed-out) until you click on one of the column-heading buttons at the top of the table, thereby designating the column in which you are interested. When you click on this sort-function button after selecting a column of interest, a pop-up menu displays three selection possibilities: **Sort Up**, **Sort Down**, or **Un-Sort**. Whichever one you select then becomes the new readout designator for that button, and the table entries then become rearranged in accordance with whichever sorting sequence you selected for the given column.

| Set/Clear Filter |

The button just to the left of the sort-function button is a two-selection button that lets you establish or clear a character string to be used as a filter for selecting specific stations to be listed in the table. This button is inactive (grayed-out) until you click on one of the column-heading buttons at the top of the table, thereby designating the column in which you are interested. When you click on this filter-function button after selecting a column of interest, a pop-up menu displays two selection possibilities: **Set Filter** and **Clear Filter**. Whichever one you select then becomes the new readout designator for that button, and the table entries then become rearranged in accordance with whatever filter setup has been. If you select the **Clear Filter** option, any previously established filter mask is removed, allowing the table to list all connected stations. If you select the **Set Filter** option, the system displays a dialog box, named for whichever column heading you last selected, with a one-line entry field soliciting your character string mask. You have a choice of entering the desired character string and then clicking on the **OK** button to initiate the filter setup or else clicking on the **Cancel** button to exit from this filter-setup process without affecting the existing display.

Update

Clicking on the **Update** button, located in the upper left corner of the blocked-off **Station Table** area, causes the program to update the contents of the Station Table.

Totals/Deltas

The button located directly to the right of the **Update** button in the upper left corner of the blocked-off **Station Table** area, is a two-selection button that affects the display of statistical information listed in the table. This is a current-state display button, with the readout identifying whichever selection is currently selected. Selecting **Totals** displays the **Frames** statistics as totals since the TRBMIM was initialized. Selecting **Deltas** displays the difference between the current totals value and the value at the time of the last update.

MAC/Canonical

The button located directly to the right of the **Totals/Deltas** button is a two-selection button that affects the display of the station addresses, toggling the format between **MAC** (Physical) and **Canonical** (Ethernet) address formats. This button is an alternate-state display button, with the readout identifying whichever format is currently selected.

Each of these address formats consists of six pairs of BCD numbers, each pair separated by a colon, with the whole representing an 89-bit binary value. The distinction between these formats is that the Canonical address format sends the binary bits low-order bit first, while the MAC address format sends the binary bits high-order bit first. Consequently, a pair having a binary value of 10111000 will be represented by a Canonical address of B8, whereas the MAC-format version of that same value will be read as a binary value of 00011101, listed as a MAC value of 1D.

In addition, there are three selection buttons located in the lower left corner of the blocked-off table area. Each of these buttons provides access to a different station-related function pertaining to whichever station entry in the table is highlighted when the button is selected, as follows:

Station Detail

The **Station Detail** button opens the Station Detail view, which is described in *Token Ring Station Detail View*, starting on page 3-38. (You can also open this same view by double-clicking on a station entry in the table, itself.)

Station Alarms

The **Station Alarms** button opens the Station Alarms dialog box, which is described in *Station Alarms Dialog Box*, starting on page 3-40.

Remove Station

The **Remove Station** button opens the Remove Station dialog box, which lets you remove the selected station (whichever station is associated with the address entry that was highlighted when this button was selected) from the ring. The Remove Station dialog box asks if you wish to remove the designated station from the ring and provides only two choices: **Yes** or **No**. Selecting the **Yes** button removes the addressed station from the ring and exits from the dialog box; selection of the **No** button simply exits from the dialog box without making any change to the ring.

Finally, two selection buttons located just above the blocked-off Station Table area provide respective access to other table views, each of which then leads to another view:

Isolating Errors Table

The **Isolating Errors Table** button opens the Token Ring Station Isolating Errors Table view, which is described in *Token Ring Station Isolating Errors Table View*, starting on page 3-32. That view in turn gives access to the Token Ring Station Non-Isolating Errors Table view, which is described in *Token Ring Non-Isolating Errors Table View*, starting on page 3-34.

Alarms Table

The **Alarms Table** button opens the Token Ring Station Alarm Thresholds view, which is described in *Token Ring Station Alarm Thresholds View*, starting on page 3-35. That view in turn gives access to the Token Ring Station Alarm States view, which is described on page 3-37.

Token Ring Station Isolating Errors Table View

The Token Ring Station Isolating Errors Table view displays an Isolating Errors Table containing information for all stations directly connected to the TRBMIM device, buttons to manipulate the information in the table, and buttons to access other views.

Opening the Token Ring Isolating Errors Table View

You can access the Token Ring Station Isolating Errors view by clicking on the **Isolating Errors** button in the Token Ring Station Table view (refer to *Token Ring Station Table Views*, starting on page 3-28). Alternatively, you can highlight either the CtTokenRingApp icon or the HubCSITR icon in the Applications view and then select the **Station Errors option** from the device menu (if using the right mouse button) or by pulling down the File menu from the menu bar and selecting the **File > Icon Subviews > Station Errors** option if using the left mouse button.

Token Ring Station Isolating Errors Table View Details

In addition to the general configuration information common to most generic views, enclosed within the status border in the top part of the view, the Token Ring Isolating Errors Table view displays the same Ring Name, Ring Number, Ring Speed, Ring Status, and Active Monitor information as presented in the Token Ring Station Table view (refer to descriptions of these fields on page 3-29).

The blocked-off **Station Isolating Errors Table** area in the lower half of the screen also uses the same tabular setup as the previously described Token Ring Station Table view. This setup includes the same Station Address and Station Name columns, the Update, Totals/Deltas, MAC/Canonical, Sort Up/Sort Down/Un-Sort, and Set/Clear Filter control buttons across the top of the table, and the same Station Detail, Station Alarms, and Remove Station selection buttons below the table entries. For information on these controls, refer to *Token Ring Station Table View Details*, starting on page 3-29.

What is different about the Station Isolating Errors Table is that it provides five new columns of information pertaining to isolated errors with respect to each station listed in the table, with each such column identified by the readout of a selection button utilized as the column heading. As with the Station Address and Station Name column buttons, clicking on any of these buttons selects that column as the column of interest for any subsequent activation of the sort-function and filter function buttons. The added columns are as follows:

Line

The number of line errors detected on the ring by the station to which the information in the line entry pertains.

Burst

The number of burst errors detected on the ring by the station to which the information in the line entry pertains.

A/C

The number of address/copied errors detected on the ring by the station to which the information in the line entry pertains.

Abort

The number of abort sequences that have been sent by the station to which the information in the line entry pertains.

Internal

The number of internal errors that have been detected by the station to which the information in the line entry pertains.

Finally, two selection buttons located just above the blocked-off Station Table area provide respective access to other table views, each of which then leads to another view:

| Non-Isolating Errors Table |

The **Non-Isolating Errors Table** button, provided in place of the Isolating Errors Table button appearing in this same location in the Token Ring Station Table view, opens the Token Ring Station Non-Isolating Errors Table view, which is described in *Token Ring Non-Isolating Errors Table View*, following.

| Alarms Table |

The **Alarms Table** button is the same as described for the Token Ring Station Table view. Clicking on this button opens the Token Ring Station Alarm Thresholds view, which is described in *Token Ring Station Alarm Thresholds View*, starting on page 3-35. That view in turn gives access to the Token Ring Station Alarm States view, which is described on page 3-37.

Token Ring Non-Isolating Errors Table View

Opening the Token Ring Non-Isolating Errors Table View

To open the Token Ring Non-Isolating Errors Table view, click on the **Non-Isolating Errors** button in the Token Ring Station Isolating Errors view (refer to *Token Ring Station Isolating Errors Table View Details*, starting on page 3-33).

Token Ring Non-Isolating Errors Table View Details

In addition to the general configuration information common to most generic views, enclosed within the status border in the top part of the view, the Token Ring Isolating Errors Table view displays the same Ring Name, Ring Number, Ring Speed, Ring Status, and Active Monitor information as presented in the Token Ring Station Table view (refer to descriptions of these fields on page 3-29).

The blocked-off **Station Non-Isolating Errors Table** area in the lower half of the screen also uses the same tabular setup as the previously described Token Ring Station Table view and the Token Ring Isolating Errors Table view. This setup includes the same Station Address and Station Name columns, the Update, Totals/Deltas, MAC/Canonical, Sort Up/Sort Down/Un-Sort, and Set/Clear Filter control buttons across the top of the table, and the same Station Detail, Station Alarms, and Remove Station selection buttons

below the table entries, as well as the Alarm Table selection button just above the table. For information on these controls, refer to *Token Ring Station Table View Details*, starting on page 3-29.

What is different about the Station Non-Isolating Errors Table is that it provides five new columns of information pertaining to non-isolated errors with respect to each station listed in the table, with each such column identified by the readout of a selection button utilized as the column heading. As with the Station Address and Station Name column buttons, clicking on any of these buttons selects that column as the column of interest for any subsequent activation of the sort-function and filter function buttons. The added columns are as follows:

LostFrames

The number of lost frames that have been detected on the ring by the station to which the information in the line entry pertains.

Congestion

The number of congestion errors that have been detected on the ring by the station to which the information in the line entry pertains.

FrameCopied

The number of frame-copied errors that have been detected on the ring by the station to which the information in the line entry pertains.

Token

The number of token errors that have been detected on the ring while the active monitor was the station to which the information in the line entry pertains.

Frequency

The number of frequency errors that have been detected on the ring by the station to which the information in the line entry pertains.

Token Ring Station Alarm Thresholds View

Opening the Token Ring Station Alarm Thresholds View

You can access the Token Ring Station Alarm Thresholds view by clicking on the **Alarms Table** button in the Token Ring Configuration View (refer to *Token Ring Configuration View Details*, starting on page 3-16) or by clicking on the Alarms Table button located just above the station table area in any of

the Token ring Station Table view, the Token Ring Station Isolating Errors view, or the Token Ring Station Non-Isolating Errors view (refer to *Token Ring Station Table View Details*, starting on page 3-29).

Token Ring Station Alarm Thresholds View Details

In addition to the general configuration information common to most generic views, enclosed within the status border in the top part of the view, the Token Ring Isolating Errors Table view displays the same Ring Name, Ring Number, Ring Speed, Ring Status, and Active Monitor information as presented in the Token Ring Station Table view (refer to descriptions of these fields on page 3-29).

The blocked-off **Station Alarm Thresholds Table** area in the lower half of the screen also uses the same tabular setup as the previously described Token Ring Station Table view, with all but one of the columns having the same button-readout headings, but the meanings are slightly different in this case, as described below. In addition, this table setup includes the same Update, Totals/Deltas, MAC/Canonical, Sort Up/Sort Down/Un-Sort, and Set/Clear Filter control buttons across the top of the table, and the same Station Detail, Station Alarms, and Remove Station selection buttons below the table entries. For information on these fields and controls, refer to *Token Ring Station Table View Details*, starting on page 3-29.

What is different about the Station Alarm Thresholds Table is that the data columns identify the threshold settings for the different alarm conditions for each station listed in the table. As with the other tables, each such column is identified by the readout of a selection button utilized as the column heading. As with the Station Address and Station Name column buttons, which are the same as on the Station Table, clicking on any of these buttons selects that column as the column of interest for any subsequent activation of the sort-function and filter function buttons. The added columns are as follows:

Line

The current alarm threshold setting for line errors to be detected on the ring with respect to the station to which the information in the line entry pertains. (The resulting number of detections will appear in the **Line** column of the Station Isolating Errors Table.)

Burst

The current alarm threshold setting for burst errors with respect to the station to which the information in the line entry pertains. (The resulting number of detections will appear in the **Burst** column of the Station Isolating Errors Table.)

A/C

The current alarm threshold setting for address/copied errors with respect to the station to which the information in the line entry pertains. (The resulting number of detections will appear in the **A/C** column of the Station Isolating Errors Table.)

Internal

The current alarm threshold setting for internal errors with respect to the station to which the information in the line entry pertains. (The resulting number of detections will appear in the **Internal** column of the Station Isolating Errors Table.)

Congestions

The current alarm threshold setting for congestion errors with respect to the station to which the information in the line entry pertains. (The resulting number of detections will appear in the **Congestions** column of the Station Non-Isolating Errors Table.)

Another difference between the Station Table and this Station Alarm Thresholds Table is that there is only one button located above the table, to the right of the Station Monitor field:

Alarm States Table

Clicking on the **Alarm States Table** button opens the Token Ring Station Alarm States view, which is described in *Token Ring Station Alarm States View*, starting on page 3-37.

Token Ring Station Alarm States View

Opening the Token Ring Station Alarm States View

You can access the Station Alarm States view by clicking on the **Alarm States Table** button in the Token Ring Station Alarm Threshold view (refer to *Token Ring Station Alarm Thresholds View Details*, starting on page 3-36).

Token Ring Station Alarm States View Details

The information and controls available in the token ring Station Alarm States view is exactly the same as described for the Token Ring Station Alarm Thresholds view in the preceding subsection, except that the data-column

entries in the Station Alarm Ítates Table that appears in that view in place of the Station Alarm Thresholds Table simply identifies whether the associated alarm (Line, Burst, A/C, Internal, or Congestions) for each listed station is **Enabled** or **Disabled**. For information pertaining to the alarms, refer to *Token Ring Station Alarm Thresholds View Details*, starting on page 3-36. To change the current state of any given alarm or combinaton of alarms for a specific station, yu can select the line entry pertaining to that station and then click on the Station Alarms button at the bottom of the table; refer to ?? for information pertaining to operation of the Station Alarms Dialogue dialog box.

Token Ring Station Detail View

Opening the Station Detail View

To open the Station Detail view for any desired station in the token ring network, select the line entry pertaining to that station in any of the station tables (in the Token Ring Station Table view, the Token Ring Station Isolating Errors view, the Token Ring Station Non-Isolating Errors view, the Token Ring Alarm Thresholds view, or the Token Ring Station Alarm States view) and then either double-click on that line entry or else click on the Station Detail button in the lower left corner of the table.

Station Detail View Details

In addition to the general configuration information common to most generic views, enclosed within the status border in the top part of the view, the Station Detail view displays basic information and alarm statistics for the selected station, control buttons to manipulate the displayed statisitcs, and selection buttons to access related dialog boxes.

A highlighted band located directly below the view name provides the following information:

Station Address – The MAC address of the station to which the information in this view pertains.

Station Name – The ASCII name assigned to this station.

Station Module – The slot number of the token ring module to which this station is connected.

Station Port – The number of the port to which this station is connected on the token ring module.

Directly below this highlighted band are three other fields providing unique information pertaining to this station:

Upstream – The MAC address of the device (neighbor) immediately upstream of the TRBMIM on the ring.

Downstream – The MAC address of the device (neighbor) immediately downstream of the TRBMIM on the ring.

Station Priority – The selected station's maximum access priority.

Two selection buttons located to the right of the colored information band provide selection options for alarm enablement and removal of the station from the ring:

| Station Removal |

The **Station Removal** button lets you modify the removal state of the station; the readout in this button displays the last request made for the given station device. Clicking on this button displays a three-selection pop-up menu. Selecting the **Remove** option causes the station to be removed from the ring. Selecting the **NotRemovable** option disables removal from the ring. The **DoNotRemove** option is the default setting; selecting this option does not affect the station.

| Configure Station Alarms |

The **Configure Station Alarms** button opens the Station Alarms Configuration view, which lets you change both the threshold value and/or the enablement state for the Line, Burst, A/C, Internal, and Received Congestion errors with respect to the selected station.

The lower half of the Station Detail view provides detailed information on the selected station. This presentation includes three color-coded pie charts giving separate breakdowns of Token Ring application statistics for Frame Breakdown, Isolating Errors, and Non-Isolating Errors. Each statistic is presented both as a total amount (measured since the TRBMIM was initialized) and also as a percentage of overall traffic. Table 3-5 provides information on the statistics displayed by the Frame Breakdown pie chart. Table 3-6 provides information on the statistics displayed by the Isolating Errors pie chart. Table 3-7 provides information on the statistics displayed by the Non-Isolating Errors pie chart.

Table 3-5. **Information in Frame Breakdown Pie Chart**

Statistic	Definition
Frames	The total number of frames detected on this station or ring.
Errors	The total number of errors detected by this station or ring.

Table 3-6. **Information in Isolating Errors Pie Chart**

Statistic	Definition
Line	The total number of line errors that have occurred on this ring.
Burst	The total number of burst errors that have occurred on this ring.
A/C	The total number of address/copied errors that have occurred on this ring.
Abort Sequence	The total number of abort sequences transmitted on this ring.
Internal	The total number of internal errors that have been detected by any station on this ring.

Table 3-7. **Information in Non-Isolating Errors Pie Chart**

Statistic	Definition
Lost Frames	The total number of times a station has had its TRR timer expire while trying to transmit.
Congestions	The total number of times a station recognizes a frame addressed to it, but has no available buffer space.
Frame Copied	The total number of times a station recognizes a frame addressed to it, and detects that the FS field A bits are set to 1.
Token	The total number of times the station acting as active monitor recognizes an error condition requiring a token be transmitted.
Frequency	The total number of frequency errors on this ring.

Below each of these pie charts, there is a set of three mutually exclusive buttons (**Total**, **Delta**, and **Accum**); whichever button you select determines the way in which the data is represented for that pie chart. A separate **Clear** button in that same area works in conjunction with the **Accum** button. For more information on the use of these buttons, refer to the ***SPECTRUM GIB Editor Guide***.

Station Alarms Dialog Box

Opening the Station Alarms Dialog Box

To open the Station Alarms dialog box for any desired station in the token ring network, highlight the line entry pertaining to that station in any of the

station tables (in the Token Ring Station Table view, the Token Ring Station Isolating Errors view, the Token Ring Station Non-Isolating Errors view, the Token Ring Alarm Thresholds view, or the Token Ring Station Alarm States view) and then select the Station Alarms button in the lower left corner of the table.

Station Alarms dialog Box Details

The controls on the Station Alarms dialog box let you modify and/or read the alarm settings for a single station or for any desired selection of stations on the ring. (The **Stations** list initially displays the stations that were on the ring at the time the dialog box was opened, but you can read and modify the settings of a valid station that was added to the ring after the view was opened by entering its address in the **Station** field.) The Station Alarms dialog box provides the following information:

Station – The address of the current station (initially, the station identified by whichever line entry was highlighted on the station table in the view from which you activated the dialog . You can enter the address of any valid station in this field to make it the current station.

Alarm – The threshold alarms that can be manipulated. The alarms in this column include Line, Internal, Burst, A/C, and Congestion.

Threshold – The current setting for each corresponding alarm threshold. You can change the values by selecting the field and editing the number.

State – The state of each corresponding alarm threshold (**Enable** or **Disable**), as determined by whichever mutually exclusive button was last slelected

Stations – The MAC addresses of all stations in the ring at the time the dialog box was opened, except the current station, which is displayed in the *Apply Settings to* list. Double-clicking on an address in this list moves it to the *Apply Settings to* list. Alternatively, you can highlight any desired station address in that list and then click on the **>** button to move that station address to the **Apply Settings to** field.

Apply Settings to – The MAC addresses of all stations to which the threshold settings may be applied. When the dialog box is intially opened, this list will contain the current station's MAC address, but you can move any desired combination of addresses from the **Stations** list to this field. Double-clicking on an address in this list moves it to the *Stations* list. Alternatively, you can highlight any desired station address in this **Apply Settings to** list and then click on the **<** button to move that station address to the **Stations** field.

> **>**

The **>** button moves the selected item from the *Stations* list to the *Apply Settings to* list.

> **<**

The **<** button moves the selected item from the *Apply Settings to* list to the *Stations* list.

> **>>**

The **>>** button moves all of the stations from the *Stations* list to the *Apply Settings to* list. The current station remains at the top of the *Apply Settings to* list if it is a valid station.

> **<<**

The **<<** button moves all of the stations from the *Apply Settings to* list to the *Stations* list. The current station remains at the top of the *Apply Settings to* list if it is a valid station.

> **Apply**

The **Apply** button applies the threshold settings to the stations listed in the *Apply Settings to* list — or to the station currently identified in the *Station* field if that list is empty.

> **Read**

The **Read** button initiates a read of the threshold settings for the selected station — or to the station currently identified in the *Station* field if that list is empty.
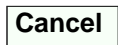
> **Cancel**

The **Cancel** button lets you exit from the dialog box; this exit does no0t affect the conditioin of any stations, which are directed to accept any value modifications ohly when you click on the **Apply** button.

Modifying Threshold Settings

To change the threshold settings for one or more stations, proceed as follows:

1. Move the addresses of all the stations to be modified to the *Apply Settings to* list. If you are only modifying the current station, as identified in the **Station** field, this step is not necessary. If you wish to modify a valid station that does not appear in the *Apply Settings to* list, enter the MAC address of that station into the *Station* field. For

information on how to move addresses between lists, refer to the button descriptions in the preceding subsection.

2. Select the desired settings to be applied to the current station and all stations in the *Apply Settings to* list by clicking on **Enable** or **Disable** for each alarm threshold, and/or typing any new desiored value into one or more *Threshold* fields.

3. Click on the **Apply** button.

If the new alarm thresholds cannot be written to the device, because of the device being down, the system will display an error message and you should try again later.

Reading Thresholds from a Station

To read the current threshold settings from any station, proceed as follows:

1. Select the station to be read from the *Apply Settings to* list, moving the station address to that list if necessary. If you wish to modify a valid station that does not appear in either list, enter its MAC address into the **Station** field.

2. Click on the **Read** button. The threshold settings for the selected station are read from the device, appearing in the applicable **Threshold** fields.

Event and Alarm Messages

What is in this Chapter

This chapter defines the types of events and alarms generated by the TRBMIM function and provides the corresponding probably cause message (if any) corresponding to those alarms.

TRBMIM Events and Alarms

SPECTRUM has been coded to respond to certain predictable events pertaining to the TRBMIM module and/or to token-ring operations by displaying corresponding event/alarm messages from the Spectrum/SG-Support/CsEvFormat directory, as listed in the left-hand column of Table 4-1, along with activating appropriate visual alarm indications. In addition, many of these event/alarm situations cause the system to display a corresponding probable cause message in the Enterprise Alarm Manager view from the Spectrum/SG-Support/CsPCause directory, as listed here for your convenience in the right-hand column of Table 4-1. If the triggering event does not constitute an alarm condition, no probable-case message appear, as also designated in the table. When the system displays these messages, the coded items designated in Table 4-1 are replaced by applicable values from the Spectrum/SS/CsVendor/Ctron_TRBMIM/BdgCSITRBMIM/AlertMap file, thereby identifying the applicable port(s), channel(s), device(s), etc.

Table 4-1.　　　TRBMIM Events and Alarms　(Sheet 1 of 23)

System Event Log Message Source and Text	Alarm View Probable Cause Message Source and Text
CsEvFormat/Event000d0001 {d "%w- %d %m-, %Y - %T"} {m} of type {t} has reported a root change (event [{e}]).	**CsPCause/Prob000d0001** This bridge has become the new root of the Spanning Tree.
CsEvFormat/Event000d0002 {d "%w- %d %m-, %Y - %T"} {m} of type {t} has reported a network topology change (event [{e}]).	**CsPCause/Prob000d0002** A port has transitioned from the Learning state to the Forwarding state, or from the Forwarding state to the Blocking state.
CsEvFormat/Event00010810 {d "%w- %d %m-, %Y - %T"} - RMON rising threshold trap received from model {m} of type {t}. AlarmIndex {I 1}, AlarmVariable {O 2}, AlarmSampleType {I 3}, AlarmValue {I 4} and AlarmRisingThreshold {I 5}. (event [{e}])	**CsPCause/Prob00010810** Remote Monitor Rising Alarm Threshold Exceeded This trap will be generated when the value of the trap exceeds the rising threshold for the alarm.
CsEvFormat/Event00010811 {d "%w- %d %m-, %Y - %T"} - RMON falling threshold trap received from model {m} of type {t}. AlarmIndex {I 1}, AlarmVariable {O 2}, AlarmSampleType {I 3}, AlarmValue {I 4} and AlarmFallingThreshold {I 5}. (event [{e}])	**CsPCause/Prob00010811** Remote Monitor Falling Alarm Threshold Exceeded This trap will be generated when the value of the trap exceeds the falling threshold for the alarm.
CsEvFormat/Event00010812 {d "%w- %d %m-, %Y - %T"} - RMON packet match trap received from model {m} of type {t}. Channel description: {S 3}. Channel had {I 2} matches. (event [{e}])	**CsPCause/Prob00010812** Packet Match Trap This trap will be generated when a packet is captured by a channel that is configured for sending SNMP traps.
CsEvFormat/Event00010306 {d "%w- %d %m-, %Y - %T"} - A(n) {t} device, named {m}, has been cold started. (event [{e}])	**No probable cause message.**
CsEvFormat/Event00010307 {d "%w- %d %m-, %Y - %T"} A(n) {t} device, named {m} has been warm started. (event [{e}])	**No probable cause message.**
CsEvFormat/Event00010308 {d "%w- %d %m-, %Y - %T"} A(n) {t} device, named {m}, has detected a communication Link Down. (event [{e}])	**CsPCause/Prob00010308** Communication link is down.

Table 4-1.   TRBMIM Events and Alarms   (Sheet 2 of 23)

System Event Log Message Source and Text	Alarm View Probable Cause Message Source and Text
CsEvFormat/Event00010309 {d "%w- %d %m-, %Y - %T"} A(n) {t} device, named {m}, has detected a communication Link Up. (event [{e}])	**CsEvFormat/Event00010309** {d "%w- %d %m-, %Y - %T"} A(n) {t} device, named {m}, has detected a communication Link Up. (event [{e}])
CsEvFormat/Event0001030a {d "%w- %d %m-, %Y - %T"} A(n) {t} device, named {m}, has detected an Authentication Failure. (event [{e}])	**CsPCause/Prob0001030a** Authorization failure. Other user is trying to connect to device with an invalid community string.
CsEvFormat/Event0001030b {d "%w- %d %m-, %Y - %T"} A(n) {t} device, named {m}, has detected an EGP Neighbor Loss. EGP Neighbor IP address is {O 1}. (event [{e}])	**CsPCause/Prob0001030b** Lost contact with EGP neighbor.
CsEvFormat/Event00420107 {d "%w- %d %m-, %Y - %T"} - MODULE REMOVAL - Device {m} of Type {t} reported that Module {I 1} has been Removed. - (event [{e}])	**CsPCause/Prob00420107** MODULE REMOVAL SYMPTOMS: A Module within this Chassis has been Removed or has Failed.
CsEvFormat/Event00420108 {d "%w- %d %m-, %Y - %T"} - MODULE INSERTION - Device {m} of Type {t} reported that a Module has been Inserted into Slot {I 1}. - (event [{e}])	**CsPCause/Prob00420108** MODULE INSERTION SYMPTOMS: A Module has been Inserted into this Chassis.
CsEvFormat/Event00420119 {d "%w- %d %m-, %Y - %T"} - TEMPERATURE WARM - Device {m} of Type {t} reported that the Module {I 1} Temperature is Warm. - (event [{e}])	**CsPCause/Prob00420119** TEMPERATURE WARM SYMPTOMS: The Module may be defective or a fan has failed in the Chassis. RECOMMENDED ACTIONS: 1) Verify that Module is not defective. 2) Check for fans failures in the Chassis and repair as needed.

Table 4-1.   TRBMIM Events and Alarms   (Sheet 3 of 23)

System Event Log Message Source and Text	Alarm View Probable Cause Message Source and Text
CsEvFormat/Event0042011a {d "%w- %d %m-, %Y - %T"} - TEMPERATURE HOT - Device {m} of Type {t} reported that the Module {I 1} Temperature is Hot. - (event [{e}])	**CsPCause/Prob0042011a** TEMPERATURE HOT SYMPTOMS: A Module may be defective or a fan has failed in the Chassis. A serious heat condition is present and should be addressed immediately. RECOMMENDED ACTIONS: 1) Verify that Module is not defective. 2) Check for fans failures in the Chassis and repair as needed.
CsEvFormat/Event0042011b {d "%w- %d %m-, %Y - %T"} - VOLTAGE LOW - Device {m} of Type {t} reported that the Slot {I 1} Power Supply Voltage is Low. - (event [{e}])	**CsPCause/Prob0042011b** VOLTAGE LOW SYMPTOMS: The internal voltage of the Power Supply Module is Low. PROBABLE CAUSES: 1) The Power Supply unit is defective. 2) An AC Power Failure has occurred in the Power Supply. RECOMMENDED ACTIONS: 1) Check the Power Supply unit on device. 2) Check Power source to device.
CsEvFormat/Event0042011c {d "%w- %d %m-, %Y - %T"} - TEMPERATURE NORMAL - Device {m} of Type {t} reported that the Module {I 1} Temperature is Normal. - (event [{e}])	**No probable cause message.**
CsEvFormat/Event0042011d {d "%w- %d %m-, %Y - %T"} - VOLTAGE NORMAL - Device {m} of Type {t} reported that the Slot {I 1} Power Supply Voltage is Normal. - (event [{e}])	**No probable cause message.**

Table 4-1.   TRBMIM Events and Alarms   (Sheet 4 of 23)

System Event Log Message Source and Text	Alarm View Probable Cause Message Source and Text
CsEvFormat/Event0042011e {d "%w- %d %m-, %Y - %T"} - FAN ABNORMAL - Device {m} of Type {t} reported that a Fan in the Chassis has Failed or is operating at an abnormal RPM rate. - (event [{e}])	**CsPCause/Prob0042011e** FAN ABNORMAL SYMPTOMS: A problem has been detected with a Cooling Fan or the Fan Tray Assembly for this device. RECOMMENDED ACTION: This failure should be addressed before overheating causes damage to the device. Check for fan failures in the Chassis and repair as needed.
CsEvFormat/Event0042011f {d "%w- %d %m-, %Y - %T"} - FAN NORMAL - Device {m} of Type {t} reported that a Fan in the Chassis has resumed Normal Operation. - (event [{e}])	**No probable cause message.**
CsEvFormat/Event00420125 {d "%w- %d %m-, %Y - %T"} - VOLTAGE LOW - Device {m} of Type {t} reported that the System Power Supply Voltage is Low. - (event [{e}])	**CsPCause/Prob00420125** VOLTAGE LOW SYMPTOMS: The internal voltage of the System Power Supply is Low. PROBABLE CAUSES: 1) The Power Supply unit is defective. 2) An AC Power Failure has occurred in the System Power Supply. RECOMMENDED ACTIONS: 1) Check the System Power Supply unit on the device. 2) Check Power source to device.
CsEvFormat/Event00420126 {d "%w- %d %m-, %Y - %T"} - VOLTAGE NORMAL - Device {m} of Type {t} reported that the System Power Supply Voltage has returned to Normal. - (event [{e}])	**No probable cause message.**

Table 4-1.   TRBMIM Events and Alarms   (Sheet 5 of 23)

System Event Log Message Source and Text	Alarm View Probable Cause Message Source and Text
CsEvFormat/Event00420136 {d "%w- %d %m-, %Y - %T"} - MODULE INSERTION - Device {m} of Type {t} reported that a Module has been Inserted into Slot {I 1}. - (event [{e}])	**CsPCause/Prob00420136** MODULE INSERTION SYMPTOMS: A Module has been Inserted into this Chassis.
CsEvFormat/Event00420201 {d "%w- %d %m-, %Y - %T"} - PORT INSERTED - Device {m} of Type {t} reported that a Station has been Inserted into Port {I 2} in Module {I 1}.- (event [{e}])	**No probable cause message.**
CsEvFormat/Event00420202 {d "%w- %d %m-, %Y - %T"} - PORT DEINSERTED - Device {m} of Type {t} reported that a Station has been DeInserted from Port {I 2} in Module {I 1}. - (event [{e}])	**No probable cause message.**
CsEvFormat/Event00420203 {d "%w- %d %m-, %Y - %T"} - RING SPEED FAULT - Device {m} of Type {t} reported that Module {I 1} has entered the Ring Speed Fault State. - (event [{e}])	**CsPCause/Prob00420203** RING SPEED FAULT SYMPTOMS: A Token Ring Module has entered the Ring Speed Fault State. PROBABLE CAUSES: 1) A Station or Ring Port attaching with a different speed than this Module is configured for. RECOMMENDED ACTIONS: 1) Detach the Station or Ring Port from the Module. 2) Re-configure the Station or Ring Port speed to match the speed of the affected Module. 3) Re-attach the Station or Ring Port to the Module.
CsEvFormat/Event00420204 {d "%w- %d %m-, %Y - %T"} - RING SPEED FAULT CLEARED - Device {m} of Type {t} reported that Module {I 1} has left the Ring Speed Fault State. - (event [{e}])	**No probable cause message.**

Table 4-1.   TRBMIM Events and Alarms   (Sheet 6 of 23)

System Event Log Message Source and Text	Alarm View Probable Cause Message Source and Text
CsEvFormat/Event00420205 {d "%w- %d %m-, %Y - %T"} - RING PORT FAULTED - Device {m} of Type {t} reported that Ring Port {I 2} in Module {I 1} has entered the Wrapped State while its Management State was Enabled. - (event [{e}])	**CsPCause/Prob00420205** RING PORT FAULTED SYMPTOMS: A Ring Port has entered the Wrapped State while its Management State was Enabled. PROBABLE CAUSES: 1) Bad cable connected to affected Port. 2) Device is down at other end of the cable. 3) Device connection is bad at other end of the cable. RECOMMENDED ACTIONS: 1) Check cable connected to affected Port. 2) Power up Device at other end of the cable. 3) Check Device connection at other end of the cable.
CsEvFormat/Event00420206 {d "%w- %d %m-, %Y - %T"} - RING PORT FAULT CLEARED - Device {m} of Type {t} reported that Ring Port {I 2} in Module {I 1} has left the Wrapped State. - (event [{e}])	**No probable cause message.**

Table 4-1.   TRBMIM Events and Alarms   (Sheet 7 of 23)

System Event Log Message Source and Text	Alarm View Probable Cause Message Source and Text
CsEvFormat/Event00420207 {d "%w- %d %m-, %Y - %T"} - BEACON STATE - Device {m} of Type {t} reported that a Beacon State has been detected. The Upstream Neighbor Station is {X 3}. - (event [{e}])	**CsPCause/Prob00420207** BEACON STATE SYMPTOMS: A Station attached to this Device has detected a new Beacon on the Ring while the Ring was in Operational State. PROBABLE CAUSES: 1) The cable between this Station and its Upstream Neighbor. 2) The Token Ring Card in the Upstream Neighbor Station is Bad. 3) This Station's Token Ring Card is Bad. RECOMMENDED ACTIONS: 1) Check the cable between this Station and its Upstream Neighbor. 2) Check the Token Ring Card in the Upstream Neighbor Station. 3) Check this Station's Token Ring Card.
CsEvFormat/Event00420208 {d "%w- %d %m-, %Y - %T"} - BEACON STATE CLEARED - Device {m} of Type {t} reported that the Last Beacon of Type has been cleared.	**No probable cause message.**
CsEvFormat/Event00420209 {d "%w- %d %m-, %Y - %T"} - STATION ADDED - Device {m} of Type {t} reported that Station {X 1} has been Added to the Allowed Station List. - (event [{e}])	**CsPCause/Prob00420209** RING SECURITY BREACH - STATION ADDED An Unauthorized Station has become attached to the Ring.
CsEvFormat/Event0042020a {d "%w- %d %m-, %Y - %T"} - STATION REMOVED - Device {m} of Type {t} reported that Station {X 1} has been Removed from the Allowed Station List. - (event [{e}])	**CsPCause/Prob0042020a** RING SECURITY BREACH - STATION REMOVED Unauthorized Station has attempted to attach itself to the Ring. Station was successfully removed from the Ring.

Table 4-1. **TRBMIM Events and Alarms** **(Sheet 8 of 23)**

System Event Log Message Source and Text	Alarm View Probable Cause Message Source and Text
CsEvFormat/Event0042020b {d "%w- %d %m-, %Y - %T"} - RING CONFIGURATION CHANGED - Device {m} of Type {t} reported that its Ring Configuration has changed. - (event [{e}])	**No probable cause message.**
CsEvFormat/Event0042020c {d "%w- %d %m-, %Y - %T"} - PORT REMOVED DURING FAULT RECOVERY - Device {m} of Type {t} reported that Port {I 1} in Module {I 2} was Removed from the Ring during a Fault Recovery Condition. - (event [{e}])	**CsPCause/Prob0042020c** PORT REMOVED DURING FAULT RECOVERY SYMPTOMS: A Port was Removed from the Ring during a Fault Recovery Condition. PROBABLE CAUSES: 1) Bad cable connected to Removed Port. 2) Device connection is bad at other end of the cable. RECOMMENDED ACTIONS: 1) Check cable connected to Removed Port. 2) Check Device connection at other end of the cable. 3) After problem is resolved, Enable the Removed Port.

Table 4-1.   TRBMIM Events and Alarms   (Sheet 9 of 23)

System Event Log Message Source and Text	Alarm View Probable Cause Message Source and Text
CsEvFormat/Event0042020d {d "%w- %d %m-, %Y - %T"} - BOARD BYPASSED DURING FAULT RECOVERY - Device {m} of Type {t} reported that Module {I 1} was Bypassed during a Fault Recovery Condition. - (event [{e}])	**CsPCause/Prob0042020d** BOARD BYPASSED DURING FAULT RECOVERY SYMPTOMS: A Module was Bypassed during a Fault Recovery Condition. PROBABLE CAUSES: 1) This Module is configured with a different Ring Speed than the Hub. RECOMMENDED ACTIONS: 1) Pull out the Bypassed Module from the Hub. 2) Re-configure this Module's Ring Speed to match that of the Hub. 3) Physically insert the Module back into the Hub. 4) Set this Module's Bypass State to Inserted.
CsEvFormat/Event0042020e {d "%w- %d %m-, %Y - %T"} - PORT VIOLATION - Device {m} of Type {t} reported that Port {I 2} in Module {I 1} has detected a Link while the Port's Management State was Disabled. - (event [{e}])	**CsPCause/Prob0042020e** PORT VIOLATION SYMPTOMS: A Link has been detected for a Port while its Management State was Disabled. PROBABLE CAUSES: 1) A Physical connection has been made between a Station and a Port while the Port's Management State was Disabled. RECOMMENDED ACTIONS: 1) If the Station belongs on this Ring, then Enable the Port's Management State. 2) If the Station does not belong on this Ring, then physically disconnect the Intruding Station from the Port.

Table 4-1.   TRBMIM Events and Alarms   (Sheet 10 of 23)

System Event Log Message Source and Text	Alarm View Probable Cause Message Source and Text
CsEvFormat/Event0042020f {d "%w- %d %m-, %Y - %T"} - PORT VIOLATION CLEARED - Device {m} of Type {t} reported that Port {I 2} in Module {I 1} has detected an Unlink while the Port's Management State was Disabled. - (event [{e}])	**No probable cause message.**
CsEvFormat/Event00420210 {d "%w- %d %m-, %Y - %T"} - FAULT RECOVERY OSCILLATION - Device {m} of Type {t} reported that the Ring is oscillating. - (event [{e}])	**CsPCause/Prob00420210** FAULT RECOVERY OSCILLATION SYMPTOMS: The Ring is oscillating. Oscillation occurs when the Ring fails a short time after recovery.
CsEvFormat/Event00420211 {d "%w- %d %m-, %Y - %T"} - RING PURGE THRESHOLD EXCEEDED - Device {m} of Type {t} reported that the Ring Purge Threshold Value of {I 1} has been Exceeded within the Timebase Value of {I 2}. - (event [{e}])	**CsPCause/Prob00420211** RING PURGE THRESHOLD EXCEEDED SYMPTOMS: The Ring Purge Threshold Value has been Exceeded. A Ring Purge is used to make the Ring return to a normal condition. PROBABLE CAUSE: An Active Monitor will initiate the Ring Purge process when: 1) A Token Error condition is detected by the Active Monitor. 2) An adapter becomes the Active Monitor in the Monitor Contention Process.

Table 4-1.   TRBMIM Events and Alarms   (Sheet 11 of 23)

System Event Log Message Source and Text	Alarm View Probable Cause Message Source and Text
CsEvFormat/Event00420212 {d "%w- %d %m-, %Y - %T"} - RING ACTIVE MONITOR ERRORS THRESHOLD EXCEEDED - Device {m} of Type {t} reported that the Ring Active Monitor Errors Threshold Value of {I 1} has been Exceeded within the Timebase Value of {I 2}. - (event [{e}])	**CsPCause/Prob00420212** RING ACTIVE MONITOR ERRORS THRESHOLD EXCEEDED SYMPTOMS: The Ring Active Monitor Errors Threshold Value has been Exceeded. PROBABLE CAUSES: 1) The Active Monitor may have received a Ring Purge or an Active Monitor Present frame that it did not transmit. 2) The Active Monitor may have received a Claim Token MAC frame which indicates that a duplicate Active Monitor or another Station has detected an error within the Active Monitor.
CsEvFormat/Event00420213 {d "%w- %d %m-, %Y - %T"} - RING TOKEN ERRORS THRESHOLD EXCEEDED - Device {m} of Type {t} reported that the Ring Token Errors Threshold Value of {I 1} has been Exceeded within the Timebase Value of {I 2}. - (event [{e}])	**CsPCause/Prob00420213** RING TOKEN ERRORS THRESHOLD EXCEEDED SYMPTOMS: The Ring Token Errors Threshold Value has been Exceeded. PROBABLE CAUSE: The Active Monitor has recognized an error condition that requires a Token to be transmitted. This occurs when the timer for a valid transmission expires (10ms).
CsEvFormat/Event00420214 {d "%w- %d %m-, %Y - %T"} - RING CLAIM TOKEN THRESHOLD EXCEEDED - Device {m} of Type {t} reported that the Ring Claim Token Threshold Value of {I 1} has been Exceeded within the Timebase Value of {I 2}. - (event [{e}])	**CsPCause/Prob00420214** RING CLAIM TOKEN THRESHOLD EXCEEDED SYMPTOMS: The Ring Claim Token Threshold Value has been Exceeded. PROBABLE CAUSES: When a Station in Standby Monitor state has determined that there is no Active Monitor operating on the Ring. If the Station claims the Token, it becomes the new Active Monitor for the Ring.

Table 4-1.   TRBMIM Events and Alarms   (Sheet 12 of 23)

System Event Log Message Source and Text	Alarm View Probable Cause Message Source and Text
CsEvFormat/Event00420215 {d "%w- %d %m-, %Y - %T"} - RING LOST FRAMES THRESHOLD EXCEEDED - Device {m} of Type {t} reported that the Ring Lost Frames Threshold Value of {I 1} has been Exceeded within the Timebase Value of {I 2}. - (event [{e}])	**CsPCause/Prob00420215** RING LOST FRAMES THRESHOLD EXCEEDED SYMPTOMS: The Ring Lost Frames Threshold Value has been Exceeded. PROBABLE CAUSE: The Ring Lost Frame Error occurs when a Station is transmitting and its timer for return expires. The Lost Frame count keeps track of how many frames transmitted by a Station fail to return. If a frame becomes lost the Active Monitor will issue a new Token.
CsEvFormat/Event00420216 {d "%w- %d %m-, %Y - %T"} - RING BEACON STATE THRESHOLD EXCEEDED - Device {m} of Type {t} reported that the Ring Beacon State Threshold Value of {I 1} has been Exceeded within the Timebase Value of {I 2}. - (event [{e}])	**CsPCause/Prob00420216** RING BEACON STATE THRESHOLD EXCEEDED SYMPTOMS: The Ring Beacon State Threshold Value has been Exceeded. PROBABLE CAUSE: When a Station determines that a serious Ring failure has occurred it will generate a Beacon MAC frame.
CsEvFormat/Event00420217 {d "%w- %d %m-, %Y - %T"} - RING FRAME COUNT THRESHOLD EXCEEDED - Device {m} of Type {t} reported that the Ring Frame Count Threshold Value of {I 1} has been Exceeded within the Timebase Value of {I 2}. - (event [{e}])	**CsPCause/Prob00420217** RING FRAME COUNT THRESHOLD EXCEEDED SYMPTOMS: The Ring Frame Count Threshold Value has been Exceeded.
CsEvFormat/Event00420218 {d "%w- %d %m-, %Y - %T"} - STATION LINE ERRORS THRESHOLD EXCEEDED - Device {m} of Type {t} reported that Station {X 3} has Exceeded the Line Errors Threshold Value of {I 1} within the Timebase Value of {I 2}. - (event [{e}])	**No probable cause message.**

Table 4-1.　　　TRBMIM Events and Alarms　(Sheet 13 of 23)

System Event Log Message Source and Text	Alarm View Probable Cause Message Source and Text
CsEvFormat/Event00420219 {d "%w- %d %m-, %Y - %T"} - STATION INTERNAL ERRORS THRESHOLD EXCEEDED - Device {m} of Type {t} reported that Station {X 3} has Exceeded the Internal Errors Threshold Value of {I 1} within the Timebase Value of {I 2}. - (event [{e}])	**No probable cause message.**
CsEvFormat/Event0042021a {d "%w- %d %m-, %Y - %T"} - STATION BURST ERRORS THRESHOLD EXCEEDED - Device {m} of Type {t} reported that Station {X 3} has Exceeded the Burst Errors Threshold Value of {I 1} within the Timebase Value of {I 2}. - (event [{e}])	**No probable cause message.**
CsEvFormat/Event0042021b {d "%w- %d %m-, %Y - %T"} - STATION A/C ERRORS THRESHOLD EXCEEDED - Device {m} of Type {t} reported that Station {X 3} has Exceeded the A/C Errors Threshold Value of {I 1} within the Timebase Value of {I 2}. - (event [{e}])	**No probable cause message.**
CsEvFormat/Event0042021c {d "%w- %d %m-, %Y - %T"} - STATION RECEIVER CONGESTION THRESHOLD EXCEEDED - Device {m} of Type {t} reported that Station {X 3} has Exceeded the Receiver Congestion Threshold Value of {I 1} within the Timebase Value of {I 2}. - (event [{e}])	**No probable cause message.**
CsEvFormat/Event0042021d {d "%w- %d %m-, %Y - %T"} - STATION REMOVE FAILURE - Device {m} of Type {t} reported that Station {X 1} could not be Removed from the Ring after three attempts.	**CsPCause/Prob0042021d** RING SECURITY BREACH - STATION REMOVE FAILURE Unauthorized Station has attempted and succeeded in attaching itself to the Ring. After 3 consecutive tries, the Station was not successfully removed from the Ring.

Table 4-1. **TRBMIM Events and Alarms** **(Sheet 14 of 23)**

System Event Log Message Source and Text	Alarm View Probable Cause Message Source and Text
CsEvFormat/Event0042021e {d "%w- %d %m-, %Y - %T"} - RING SPEED FAULT - Device {m} of Type {t} reported that Module {I 1}, Port {I 2} has entered the Ring Speed Fault State. - (event [{e}])	**CsPCause/Prob0042021e** RING SPEED FAULT SYMPTOMS: A Token Ring Module has entered the Ring Speed Fault State. PROBABLE CAUSES: A Station or Ring Port attaching with a different speed than this Module is configured for. RECOMMENDED ACTIONS: 1) Detach the Station or Ring Port from the Module. 2) Re-configure the Station or Ring Port speed to match the speed of the affected Module. 3) Re-attach the Station or Ring Port to the Module.
CsEvFormat/Event0042021f {d "%w- %d %m-, %Y - %T"} - RING SPEED FAULT CLEARED - Device {m} of Type {t} reported that Module {I 1}, Port {I 2} has left the Ring Speed Fault State. - (event [{e}])	**No probable cause message.**
CsEvFormat/Event00420220 {d "%w- %d %m-, %Y - %T"} - PORT INSERTED - Device {m} of Type {t} reported that a Station has been Inserted into Board {I 1}, Port Group {I 2}, Port {I 3}. - (event [{e}])	**No probable cause message.**
CsEvFormat/Event00420221 {d "%w- %d %m-, %Y - %T"} - PORT DEINSERTED - Device {m} of Type {t} reported that a Station has been DeInserted from Board {I 1}, Port Group {I 2}, Port {I 3}. - (event [{e}])	**No probable cause message.**

Table 4-1.   TRBMIM Events and Alarms   (Sheet 15 of 23)

System Event Log Message Source and Text	Alarm View Probable Cause Message Source and Text
CsEvFormat/Event00420222 {d "%w- %d %m-, %Y - %T"} - RING SPEED FAULT - Device {m} of Type {t} reported that Board {I 1} has entered the Ring Speed Fault State. - (event [{e}])	**CsPCause/Prob00420222** RING SPEED FAULT SYMPTOMS: A Token Ring Module has entered the Ring Speed Fault State. PROBABLE CAUSES: A Station or Ring Port attaching with a different speed than this Module is configured for. RECOMMENDED ACTIONS: 1) Detach the Station or Ring Port from the Module. 2) Re-configure the Station or Ring Port speed to match the speed of the affected Module. 3) Re-attach the Station or Ring Port to the Module.
CsEvFormat/Event00420223 {d "%w- %d %m-, %Y - %T"} - RING SPEED FAULT CLEARED - Device {m} of Type {t} reported that Board {I 1} has left the Ring Speed Fault State. - (event [{e}])	**No probable cause message.**

Table 4-1.   TRBMIM Events and Alarms   (Sheet 16 of 23)

System Event Log Message Source and Text	Alarm View Probable Cause Message Source and Text
CsEvFormat/Event00420224 {d "%w- %d %m-, %Y - %T"} - RING PORT FAULTED - Device {m} of Type {t} reported that Board {I 1}, Port Group {I 2}, Port {I 3} has entered the Wrapped State while its Management State was Enabled. - (event [{e}])	**CsPCause/Prob00420224** RING PORT FAULTED SYMPTOMS: A Ring Port has entered the Wrapped State while its Management State was Enabled. PROBABLE CAUSES: 1) Bad cable connected to affected Port. 2) Device is down at other end of the cable. 3) Device connection is bad at other end of the cable. RECOMMENDED ACTIONS: 1) Check cable connected to affected Port. 2) Power up Device at other end of the cable. 3) Check Device connection at other end of the cable.
CsEvFormat/Event00420225 {d "%w- %d %m-, %Y - %T"} - RING PORT FAULT CLEARED - Device {m} of Type {t} reported that Board {I 1}, Port Group {I 2}, Port {I 3} has left the Wrapped State. - (event [{e}])	**No probable cause message.**

Table 4-1.　　TRBMIM Events and Alarms　(Sheet 17 of 23)

System Event Log Message Source and Text	Alarm View Probable Cause Message Source and Text
CsEvFormat/Event00420226 {d "%w- %d %m-, %Y - %T"} - BEACON STATE - Device {m} of Type {t} reported that Beacon Type {I 8} has been detected on Ring {I 1} from station {T string 2}, address {X 3}. The Upstream Neighbor Station is {X 4}, Board {I 5}, Port Group {I 6}, Port {I 7}. - (event [{e}])	**CsPCause/Prob00420226** BEACON STATE SYMPTOMS: A Station attached to this Device has detected a new Beacon on the Ring while the Ring was in Operational State. PROBABLE CAUSES: 1) The cable between this Station and its Upstream Neighbor. 2) The Token Ring Card in the Upstream Neighbor Station is Bad. 3) This Station's Token Ring Card is Bad. RECOMMENDED ACTIONS: 1) Check the cable between this Station and its Upstream Neighbor. 2) Check the Token Ring Card in the Upstream Neighbor Station. 3) Check this Station's Token Ring Card.
CsEvFormat/Event00420227 {d "%w- %d %m-, %Y - %T"} - BEACON STATE CLEARED - Device {m} of Type {t} reported that the Last Beacon on Ring {I 1} has been cleared.	**No probable cause message.**
CsEvFormat/Event00420228 {d "%w- %d %m-, %Y - %T"} - STATION ADDED - Device {m} of Type {t} reported that Station {X 2} on Ring {I 1} has been Added to the Allowed Station List. - (event [{e}])	**CsPCause/Prob00420228** RING SECURITY BREACH - STATION ADDED Unauthorized Station has become attached to the Ring.
CsEvFormat/Event00420229 {d "%w- %d %m-, %Y - %T"} - STATION REMOVED - Device {m} of Type {t} reported that Station {X 2} on Ring {I 1} has been Removed from the Allowed Station List. - (event [{e}])	**CsPCause/Prob00420229** RING SECURITY BREACH - STATION REMOVED Unauthorized Station has attempted to attach itself to the Ring. Station was successfully removed from the Ring.

Table 4-1.　　　TRBMIM Events and Alarms　(Sheet 18 of 23)

System Event Log Message Source and Text	Alarm View Probable Cause Message Source and Text
CsEvFormat/Event0042022c {d "%w- %d %m-, %Y - %T"} - PORT REMOVED DURING FAULT RECOVERY - Device {m} of Type {t} reported that Board {I 1}, Port Group {I 2}, Port {I 3} was Removed from the Ring during a Fault Recovery Condition. - (event [{e}])	**CsPCause/Prob0042022c** PORT REMOVED DURING FAULT RECOVERY SYMPTOMS: A Port was Removed from the Ring during a Fault Recovery Condition. PROBABLE CAUSES: 1) Bad cable connected to Removed Port. 2) Device connection is bad at other end of the cable. RECOMMENDED ACTIONS: 1) Check cable connected to Removed Port. 2) Check Device connection at other end of the cable. 3) After problem is resolved, Enable the Removed Port.
CsEvFormat/Event0042022e {d "%w- %d %m-, %Y - %T"} - BOARD BYPASSED DURING FAULT RECOVERY - Device {m} of Type {t} reported that Board {I 1} was Bypassed during a Fault Recovery Condition. - (event [{e}])	**CsPCause/Prob0042022e** BOARD BYPASSED DURING FAULT RECOVERY SYMPTOMS: A Module was Bypassed during a Fault Recovery Condition. PROBABLE CAUSES: 1) This Module is configured with a different Ring Speed than the Hub. RECOMMENDED ACTIONS: 1) Pull out the Bypassed Module from the Hub. 2) Re-configure this Module's Ring Speed to match that of the Hub. 3) Physically insert the Module back into the Hub. 4) Set this Module's Bypass State to Inserted.

Table 4-1.   TRBMIM Events and Alarms   (Sheet 19 of 23)

System Event Log Message Source and Text	Alarm View Probable Cause Message Source and Text
CsEvFormat/Event0042022f {d "%w- %d %m-, %Y - %T"} - PORT VIOLATION - Device {m} of Type {t} reported that Board {I 1}, Port Group {I 2}, Port {I 3} has detected a Link while the Port's Management State was Disabled. - (event [{e}])	**No probable cause message.**
CsEvFormat/Event00420230 {d "%w- %d %m-, %Y - %T"} - PORT VIOLATION CLEARED - Device {m} of Type {t} reported that Board {I 1}, Port Group {I 2} in Port {I 3} has detected an Unlink while the Port's Management State was Disabled. - (event [{e}])	**No probable cause message.**
CsEvFormat/Event00420231 {d "%w- %d %m-, %Y - %T"} - RING PURGE THRESHOLD EXCEEDED - Device {m} of Type {t} reported that the Ring Purge Threshold Value of {I 2} has been Exceeded within the Timebase Value of {I 3} for Ring {I 1}. - (event [{e}])	**CsPCause/Prob00420231** RING PURGE THRESHOLD EXCEEDED SYMPTOMS: The Ring Purge Threshold Value has been Exceeded. A Ring Purge is used to make the Ring return to a normal condition. PROBABLE CAUSE: An Active Monitor will initiate the Ring Purge process when: 1) A Token Error condition is detected by the Active Monitor. 2) An adapter becomes the Active Monitor in the Monitor Contention Process.

Table 4-1.   TRBMIM Events and Alarms   (Sheet 20 of 23)

System Event Log Message Source and Text	Alarm View Probable Cause Message Source and Text
CsEvFormat/Event00420232 {d "%w- %d %m-, %Y - %T"} - RING ACTIVE MONITOR ERRORS THRESHOLD EXCEEDED - Device {m} of Type {t} reported that the Ring Active Monitor Errors Threshold Value of {I 2} has been Exceeded within the Timebase Value of {I 3} for Ring {I 1}. - (event [{e}])	**CsPCause/Prob00420232** RING ACTIVE MONITOR ERRORS THRESHOLD EXCEEDED SYMPTOMS: The Ring Active Monitor Errors Threshold Value has been Exceeded. PROBABLE CAUSES: 1) The Active Monitor may have received a Ring Purge or an Active Monitor Present frame that it did not transmit. 2) The Active Monitor may have received a Claim Token MAC frame which indicates that a duplicate Active Monitor or another Station has detected an error within the Active Monitor.
CsEvFormat/Event00420233 {d "%w- %d %m-, %Y - %T"} - RING TOKEN ERRORS THRESHOLD EXCEEDED - Device {m} of Type {t} reported that the Ring Token Errors Threshold Value of {I 2} has been Exceeded within the Timebase Value of {I 3} for Ring {I 1}. - (event [{e}])	**CsPCause/Prob00420233** RING TOKEN ERRORS THRESHOLD EXCEEDED SYMPTOMS: The Ring Token Errors Threshold Value has been Exceeded. PROBABLE CAUSE: The Active Monitor has recognized an error condition that requires a Token to be transmitted. This occurs when the timer for a valid transmission expires (10ms).
CsEvFormat/Event00420234 {d "%w- %d %m-, %Y - %T"} - RING CLAIM TOKEN THRESHOLD EXCEEDED - Device {m} of Type {t} reported that the Ring Claim Token Threshold Value of {I 2} has been Exceeded within the Timebase Value of {I 3} for Ring {I 1}. - (event [{e}])	**CsPCause/Prob00420234** RING CLAIM TOKEN THRESHOLD EXCEEDED SYMPTOMS: The Ring Claim Token Threshold Value has been Exceeded. PROBABLE CAUSE: When a Station in Standby Monitor state has determined that there is no Active Monitor operating on the Ring. If the Station claims the Token, it becomes the new Active Monitor for the Ring.

Table 4-1.   TRBMIM Events and Alarms   (Sheet 21 of 23)

System Event Log Message Source and Text	Alarm View Probable Cause Message Source and Text
CsEvFormat/Event00420235 {d "%w- %d %m-, %Y - %T"} - RING LOST FRAMES THRESHOLD EXCEEDED - Device {m} of Type {t} reported that the Ring Lost Frames Threshold Value of {I 2} has been Exceeded within the Timebase Value of {I 3} for Ring {I 1}. - (event [{e}])	**CsPCause/Prob00420235** RING LOST FRAMES THRESHOLD EXCEEDED SYMPTOMS: The Ring Lost Frames Threshold Value has been Exceeded. PROBABLE CAUSE: The Ring Lost Frame Error occurs when a Station is transmitting and its timer for return expires. The Lost Frame count keeps track of how many frames transmitted by a Station fail to return. If a frame becomes lost the Active Monitor will issue a new Token.
CsEvFormat/Event00420236 {d "%w- %d %m-, %Y - %T"} - RING FRAME COUNT THRESHOLD EXCEEDED - Device {m} of Type {t} reported that the Ring Frame Count Threshold Value of {I 2} has been Exceeded within the Timebase Value of {I 3} for Ring {I 1}. - (event [{e}])	**CsPCause/Prob00420236** RING FRAME COUNT THRESHOLD EXCEEDED SYMPTOMS: The Ring Frame Count Threshold Value has been Exceeded.
CsEvFormat/Event00420237 {d "%w- %d %m-, %Y - %T"} - STATION LINE ERRORS THRESHOLD EXCEEDED - Device {m} of Type {t} reported that Station {X 4} has Exceeded the Line Errors Threshold Value of {I 2} within the Timebase Value of {I 3} for Ring {I 1}. - (event [{e}])	**CsPCause/Prob00420237** LINE ERRORS THRESHOLD EXCEEDED SYMPTOMS: The Line Errors Threshold Value has been Exceeded.
CsEvFormat/Event00420238 {d "%w- %d %m-, %Y - %T"} - STATION INTERNAL ERRORS THRESHOLD EXCEEDED - Device {m} of Type {t} reported that Station {X 4} has Exceeded the Internal Errors Threshold Value of {I 2} within the Timebase Value of {I 3} for Ring {I 1}. - (event [{e}])	**CsPCause/Prob00420238** LOST INTERNAL ERRORS THRESHOLD EXCEEDED SYMPTOMS: The Lost Internal Errors Threshold Value has been Exceeded.
CsEvFormat/Event00420239 {d "%w- %d %m-, %Y - %T"} - STATION BURST ERRORS THRESHOLD EXCEEDED - Device {m} of Type {t} reported that Station {X 4} has Exceeded the Burst Errors Threshold Value of {I 2} within the Timebase Value of {I 3} for Ring {I 1}. - (event [{e}])	**CsPCause/Prob00420239** LOST BURST ERRORS THRESHOLD EXCEEDED SYMPTOMS: The Lost Burst Errors Threshold Value has been Exceeded.

Table 4-1.   TRBMIM Events and Alarms   (Sheet 22 of 23)

System Event Log Message Source and Text	Alarm View Probable Cause Message Source and Text
CsEvFormat/Event0042023a {d "%w- %d %m-, %Y - %T"} - STATION A/C ERRORS THRESHOLD EXCEEDED - Device {m} of Type {t} reported that Station {X 4} has Exceeded the A/C Errors Threshold Value of {I 2} within the Timebase Value of {I 3} for Ring {I 1}. - (event [{e}])	**CsPCause/Prob0042023a** ADDRESS/COPIED ERRORS THRESHOLD EXCEEDED SYMPTOMS: The Address/Copied Errors Threshold Value has been Exceeded.
CsEvFormat/Event0042023b {d "%w- %d %m-, %Y - %T"} - STATION RECEIVER CONGESTION THRESHOLD EXCEEDED - Device {m} of Type {t} reported that Station {X 4} has Exceeded the Receiver Congestion Threshold Value of {I 2} within the Timebase Value of {I 3} for Ring {I 1}. - (event [{e}])	**CsPCause/Prob0042023b** RECEIVER CONGESTION ERRORS THRESHOLD EXCEEDED SYMPTOMS: The Receiver Congestion Errors Threshold Value has been Exceeded.
CsEvFormat/Event0042023c {d "%w- %d %m-, %Y - %T"} - RING SPEED FAULT - Device {m} of Type {t} reported that Board {I 1}, Port Group {I 2}, Port {I 3} has entered the Ring Speed Fault State. - (event [{e}])	**No probable cause message.**
CsEvFormat/Event0042023d {d "%w- %d %m-, %Y - %T"} - RING SPEED FAULT CLEARED - Device {m} of Type {t} reported that Board {I 1}, Port Group, {I 2}, Port {I 3} has left the Ring Speed Fault State. - (event [{e}])	**No probable cause message.**
CsEvFormat/Event0042023e {d "%w- %d %m-, %Y - %T"} - TR TPIM INSTALLED - Device {m} of Type {t} reported a TPIM was inserted on Board {I 1}, Port Group {I 2}, Port {I 3}. - (event [{e}])	**No probable cause message.**
CsEvFormat/Event0042023f {d "%w- %d %m-, %Y - %T"} - TR TPIM REMOVED - Device {m} of Type {t} reported a TPIM was removed on Board {I 1}, Port Group {I 2}, Port {I 3}. - (event [{e}])	**No probable cause message.**

Table 4-1.　　　TRBMIM Events and Alarms　(Sheet 23 of 23)

System Event Log Message Source and Text	Alarm View Probable Cause Message Source and Text
CsEvFormat/Event00420240 {d "%w- %d %m-, %Y - %T"} - NEIGHBOR NOTIFICATION FAILED - Device {m} of Type {t} reported that neighbor notification process has not completed on Ring {I 1}. - (event [{e}])	**No probable cause message.**
CsEvFormat/Event00420241 {d "%w- %d %m-, %Y - %T"} - FAULT RECOVERY OSCILLATION - Device {m} of Type {t} reported that Ring {I 1} is oscillating. - (event [{e}])	**CsPCause/Prob00420241** FAULT RECOVERY OSCILLATION SYMPTOMS: The Ring is oscillating. Oscillation occurs when the Ring fails a short time after recovery.

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